41

MAY 26 1939

the OIL AND GAS JOURNAL

MAY 25
1939

PRICE
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MODERN DRILLING PRACTICE

Says:

It takes Weight to make hole FAST—Put that weight at bottom with Tandem Collars—and make STRAIGHT HOLE FAST

~and use

Hughes "Tailor-Made" Rock Bits

Built to "take it"

UP OR
DOWN
5000
THERE'S A TRUE MEASURE OF ACCURACY

The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

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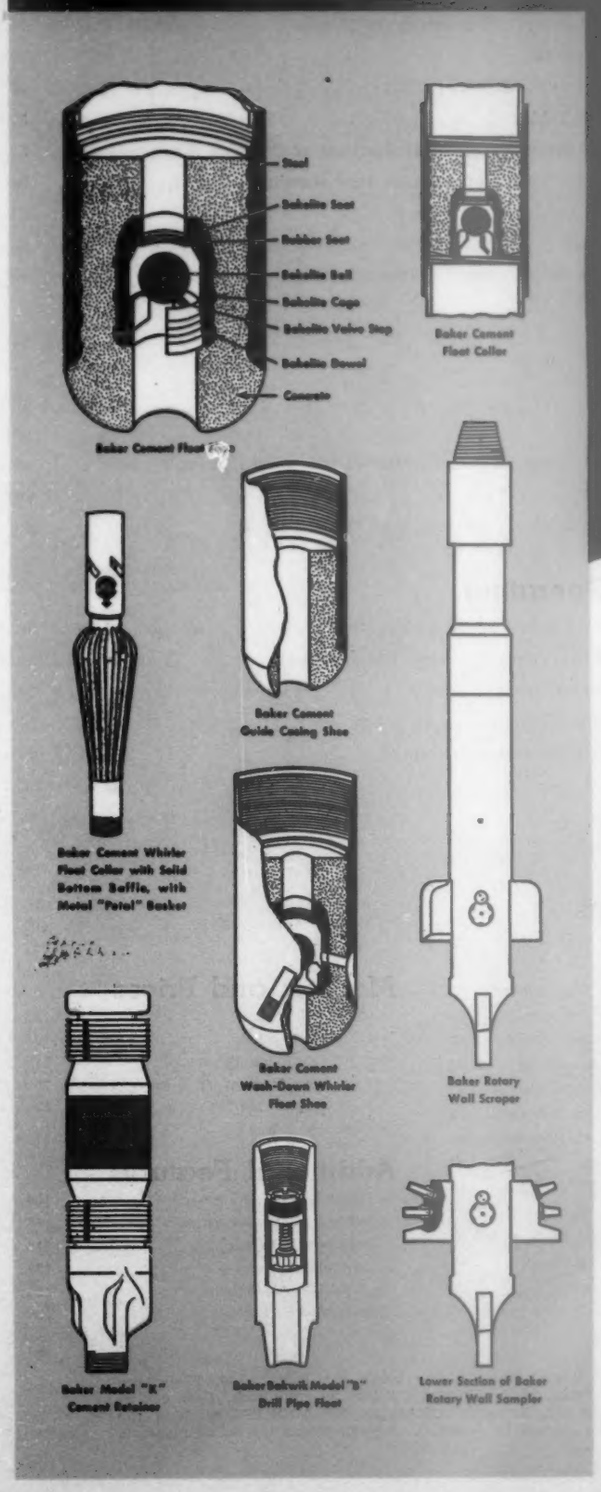
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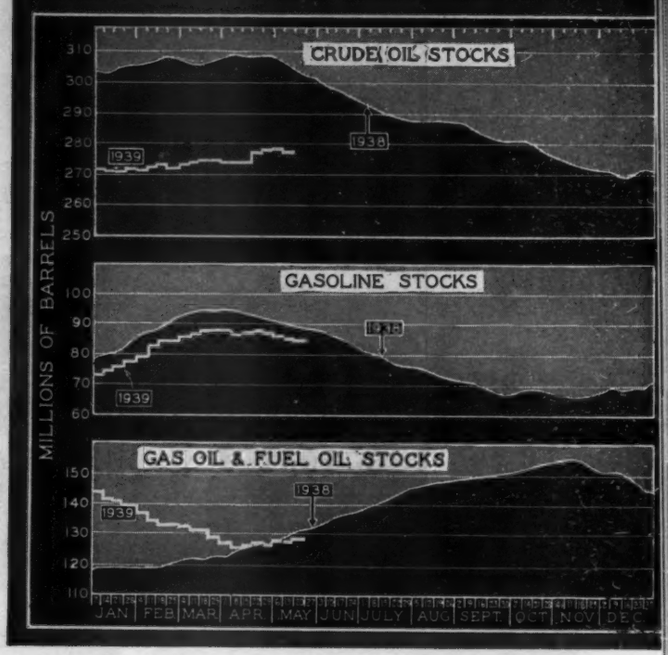
Trends

High June Demand Will Provide Basis for Stable Markets



REPORTS of individual companies and the latest monthly estimate of the Bureau of Mines assure a record total demand during June. It is known that some of the larger crude purchasing companies expect to increase their deliveries to refinery connections next month, a program of expansion which will continue through the summer period.

CRUDE PRODUCTION *3,440,966 bbl. daily average—up 36,610 bbl. One year ago 3,164,283 bbl.*

CRUDE STOCKS *277,739,000 bbl. as of May 13—down 868,000 bbl. One year ago 304,198,000 bbl.*

GASOLINE STOCKS *84,294,000 bbl. as of May 20—down 514,000 bbl. One year ago 88,825,000 bbl.*

GAS AND FUEL OIL STOCKS *128,250,000 bbl. as of May 20—up 713,000 bbl. One year ago 131,455,000 bbl.*

REFINERY RUNS *3,460,000 bbl. daily week ending May 20—up 60,000 bbl. One year ago 3,201,000 bbl.*

These schedules indicate that crude producers will benefit from the increased demand for refinery products over the remainder of the year more than they have the past few months. Owing to increased gasoline yields and the desire of refiners to liquidate excess stocks of finished products, particularly the heavy oils, the crude oil deliveries have been under last year's, despite a gain in demand for petroleum products of more than 5 per cent. It is now believed that gains in crude shipments will be more in line with the increased deliveries of finished products, a development which should aid in bringing about the needed balance in crude oil operations.

The other favorable development of the week was the increase to normal levels in posted dealer and tank-wagon prices for gasoline in Illinois and Indiana. It is hoped that this is the start of a trend which will see price advances not only throughout the Middle West but in other sections of the country east of the West Coast. Leaders of the industry are stressing the need for higher prices, starting at the refineries and extending through jobber and retail markets. Some have expressed the fear that unless these advances materialize in the immediate future it will be impossible to maintain present posted schedules for crude oil.

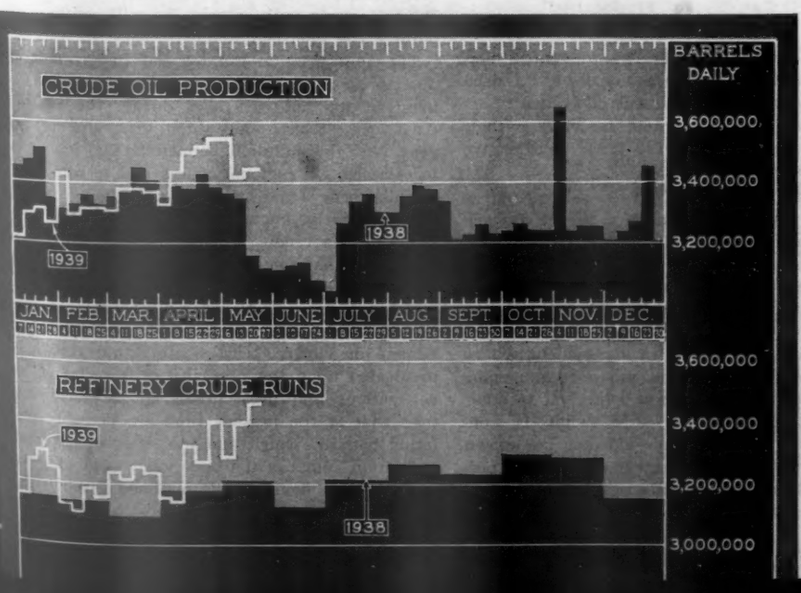
The lower prices for refinery products, which have a direct bearing on the earnings of the larger operating units and many of the smaller companies, developed during an overproduction period starting in late 1937.

There continue to be bad spots in the crude production situation and it is not certain that a larger demand in June will correct them. Crude production has been down over the past two weeks owing to 2-day shutdowns in Texas. The 1-day shutdown will be resumed this week and Texas output will return to the levels of late April. Those in touch with conditions are hopeful that daily crude output in June will not exceed that of May. Certain aspects of the Illinois situation are becoming more critical with no hope of any aid from the legislature at its regular session. Many predict that the production will reach 250,000 bbl. daily by midsummer.

Developments in refinery markets are partly dominated by seasonal conditions. With the main gasoline consuming season to be under way in another week strength in that market was reported at several points. Heating oils which are going to storage in preparation for next fall, are soft. Heavy fuels are strong.

DAILY AVERAGE PRODUCTION FOR WEEK

	May 20, 1939	Bur. Mines May est. of demand	May state allowables	May 13, 1939
Oklahoma City	107,400	.....	.....	99,050
Fitts	27,025	.....	.....	26,000
Remainder of state	328,825	.....	.....	328,105
Total Oklahoma	463,250	455,800	428,000	453,155
East Texas	372,348	.....	.....	372,298
West Texas	197,397	.....	.....	197,100
North Central Texas	114,049	.....	.....	112,297
Texas Panhandle	70,900	.....	.....	63,400
East Central Texas	91,796	.....	.....	89,596
Gulf Coast Texas	341,397	.....	.....	337,347
Southwest Texas	97,448	.....	.....	96,949
Total Texas	1,285,335	1,406,100	1,398,077	1,268,987
North Louisiana	73,335	.....	.....	76,160
Gulf Coast Louisiana	194,000	.....	.....	193,450
Total Louisiana	267,335	261,600	263,634	269,610
California	625,750	582,600	575,000	620,250
Kansas	175,550	152,600	170,350	176,240
Arkansas	55,205	52,900	.....	54,150
Eastern fields	99,900	102,900	.....	99,100
Illinois	214,700	159,700	.....	210,850
Michigan	63,891	50,000	.....	63,704
New Mexico	116,880	115,500	113,100	116,910
Rocky Mountain area	73,170	85,500	.....	71,400
Total United States	3,440,966	3,425,200	.....	3,404,356



Harris & Ewing photos

Investigations Reflect Policy of Department of Justice

By HENRY D. RALPH

WASHINGTON, D. C., May 22.—Further antitrust investigations of the oil industry in addition to the Los Angeles and Danville grand jury sittings may be expected as the result of increased appropriations for antitrust enforcement and the attorney general's announcement of a policy of nationwide proceedings against industries of national scope.

On the heels of the announcement that the Department of Justice was calling a grand jury in Danville, Ill., apparently to retry the Madison cases, the House appropriations committee released hearings on the Department of Justice appropriation bill, at which Thurman W. Arnold, assistant attorney general in charge of the antitrust division, forecast a "cover-all suit" against the oil industry and hinted that unless oil companies divest themselves of the control of filling stations and unless the antitrust laws can be used to bring about more competition in the oil industry, Congress will be asked for federal regulation of the industry. On the same day, Attorney General Frank Murphy issued his long-awaited statement of antitrust policy in which he declared that unlawful restraints will be attacked in proceedings comprehensive enough to cover an entire industry.

The hint of federal control as an alternative to a literal application of the Sherman Act was sufficient to bring into the open fears that the investigations and suits are part of a plot to bring about federal control of the entire oil industry. However, there is no evidence of any such plan, and it is well known that the Government, being composed of departments and bureaus which often work at cross purposes and usually without closely integrated policies, is scarcely capable of evolving and pursuing such a plot without the fact leaking out. What Mr. Arnold probably had in mind was his theory that as a result of antitrust investigations and suits Congress should be asked to write special laws to control particular situations in various industries as the need is developed by the Department of Justice.

Messrs. Murphy and Arnold assert it is their aim to make the antitrust laws constructive rather than destructive.

Strong endorsement of the proposal to create a Bureau of Industrial Economics in the Department of Commerce is contained in the attorney general's policy statement, and this proposal was placed before Congress this week when President Roosevelt asked for a supplemental appropriation of $255,000 to equip the Department of Commerce with business specialists "of a new ability" to study economic trends and make recommendations to Congress, to business men, and to other government departments. Just what is contemplated by this proposal will not be known until Congress holds hearings but there is a possibility that such an organization might become a sort of super N.R.A. to tell business what it must do to avoid antitrust suits. What may have been an initial experiment apparently ended in failure last week when representatives of West Coast oil companies facing investigation by the Los Angeles grand jury returned home without any assurance that a plan of voluntary cooperation for stabilizing the California oil industry would be accepted by the Department of Justice. It is understood Commerce Department officials informed the oil men it is unlikely the Department of Justice would accept their proposals although the many discussions were said to have clarified the position on both sides.

The position of the oil industry may be cleared somewhat after the presentation of its case before the Temporary National Economic Committee a month or so hence, but while the attorney general declared he is awaiting the results of the T.N.E.C. study with interest he will continue to enforce the Sherman Act.

The appropriation bill for the Department of Justice carries a total of $1,300,000 for enforcement of the antitrust laws during the coming fiscal year, $520,000 more than during the current year. With this additional money the division plans to establish six regional offices and to hire additional attorneys and investigators. The appropriations committee apparently was sold on this program for its report declared "the committee is convinced that some measurable enlargement of the activities of this division is essential, if the antitrust laws are to be given a reasonable degree of enforcement. The program is not intended to be one of violent 'trust busting' but rather is predicated upon the necessity of a series of investigations and prosecutions in certain industries that at the present time are palpably violating both the spirit and the letter of antitrust legislation. Much of the beneficial result of these activities can doubtless be obtained through the

Unless the Department of Justice postpones action a federal grand jury will be sworn in May 26 before federal District Judge Paul J. McCormick at Los Angeles, to conduct an investigation of oil business practices in California.

Crude oil producers fear this may disturb the present condition of equilibrium in California, attained only after prolonged effort for conservation. Independent refiners and dealers have also voiced their anxiety over its possible effects upon the stabilization program.

relatively simple means of a consent decree. Such procedure tends to establish a certain pattern of permissive action which, pieced together one by one, should serve as compelling traffic lights to business in determining whether to go or stop along any thoroughfare of business activity and practices."

Arnold's Statement

References to the oil industry and his general antitrust policy were made by Assistant Attorney General Arnold when he appeared before the House appropriations committee April 28. He was questioned by Rep. Thomas S. McMillan of South Carolina, and the following is taken from the transcript:

"Mr. McMillan. I wish you would give us a few words about the oil industry.

"Mr. Arnold. Our prosecutions in the case of the oil industry in the past have suffered from the lack of completely nation-wide organized efforts and funds. It cost us $150,000. It lasted a long time, and is still going on, due to a rather unfortunate situation. Within two weeks we will have a grand jury investigation on the Pacific Coast.

"Mr. McMillan. One of the principal complaints that I hear about the oil situation in that these major oil industries oftentimes resort to any sort of practice or procedure to undersell the independent. There are still left a few independent oil concerns in the country, and when a major oil industry comes around and undersells their products to the distributors, it puts the independent on his mettle; and I think evidences of that sort have been developed in numerous quarters all over the country.

"Mr. Arnold. There are two resolutions that have been sent in from Chicago, demanding action, also one from the Pacific Coast. Our difficulty is just this: We hit it in Madison once, and then we went out to the Pacific Coast and hit it again, and we have a suit pending in New York; but we have not got this cover-all suit. The issue ought to be raised as to whether the oil companies must not divest themselves of the control of these filling stations. My point is this: That either we are going to have competition in the oil industry; or, if that is impossible, it has got to go to Congress for regulation—one of the two. I would like to get enough men to cover that on a national scale instead of by piecemeal.

"Mr. McMillan. What is the effect of this effort on the part of the Government—what will be the reaction of the public so far as confidence is concerned?

"Mr. Arnold. I think we will just get confidence. So far as the 700 independent oil companies are concerned, their lack of confidence because the antitrust laws are not enforced is terrific in that whole group.

"Mr. McMillan. We want to be consistent, if we can. We advocate today the restoration of confidence on the part of the people of the country; and, on the other hand, if we launch out on an extended program of antitrust investigations, just what will be the outcome. We do not want to do anything to disturb industry and confidence if we can help it.

"Mr. Arnold. I think that we can do, by virtue of our civil procedure, a really constructive job. My policy with regard to the civil decrees is simply to do this: I never suggest to any of these people what they should do to restore orderly marketing under some decent arrangement. I tell them that they know their business better than I do, but that they cannot continue as they are doing under the present law. If we adopt this plan it may be that it is a reasonable restraint of trade coming under the head of mass efficiency and orderly marketing practice. That is, we must not destroy the efficiency of mass production, and we must not destroy orderly marketing. And so I am hoping for civil decrees which may clarify many of those situations."

Just what results the Department of Justice is expecting from its Danville grand jury investigation are not entirely clear; but it seems apparent the department is not satisfied with the results of its two Madison trials and hopes at Danville to accomplish what it failed to do at Madison.

The definite statement that government regulation is the only alternative to strict antitrust enforcement was made in a speech prepared by Mr. Arnold for delivery before the San Francisco convention of the National Association of Purchasing Agents. Mr. Arnold insisted he prefers competition to regulation, but he left no doubt that in his mind there must be government control in any industry where for some reason competition cannot be forced through strict application of the Sherman Act:

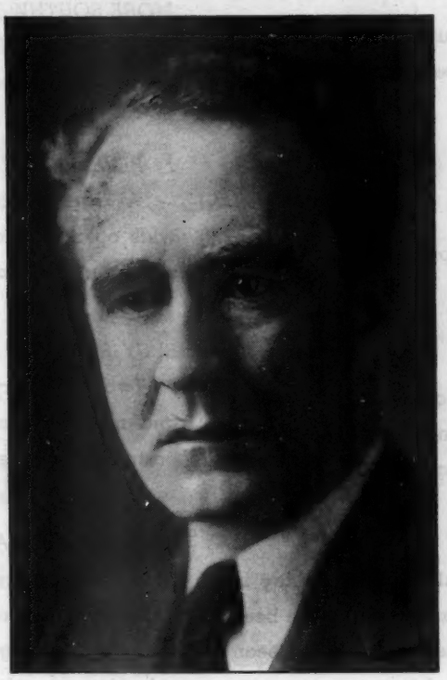
"There are only two ways in which government may deal with production and distribution of goods. One is by protecting competitive enterprise from destruction by aggressive combinations. This job will not take care of itself. The other is direct government control. As competitive enterprise disappears, the need for government control begins. There is a long period of economic dislocation before that need is recognized. . . . If there is to be arbitrary power over prices, production and distribution, its exercise will be controlled by the state or those who exercise it will, for practical purposes, become the state. Today such developments are proceeding more rapidly than is comfortable for this unsettled world.

"There is no evidence that mass production requires such giant enterprises that competition becomes impossible; there is much evidence that without competitive price policies mass production limps badly. Our traditions, our ideals, our desires, and our hopes are all on the side of free and independent enterprise and against government control. Our problem is, therefore, to make free and independent enterprise function as a producer and distributor of wealth. Government should step in only where free and independent enterprise cannot do the job. It should remain in only if competitive conditions cannot be restored. . . .

"Only an administrative tribunal with broad powers could tell business in advance what it might do. The essence of the judicial method is to compel business to use its own judgment as to the reasonableness of its practices and to put the risk upon it that reckless or careless action will be penalized after its consequences have become recognized. . . . Business cannot have its cake and eat it. If it desires the freedom and lack of regulation which comes from a judicial referee, it cannot have the certainty which comes from an administrative director. Under the judicial system, clarification of the antitrust laws can come only case by case. It must follow enforcement, it cannot precede it. Such a system has the great and unique advantage, however, that it can evolve—that it does not bind industrial development by a rigid straitjacket. Under a judicial administration of the antitrust laws, business must make a guess, and accept a penalty if it guesses wrong. This lacks the comfort of a paternalistic guidance. It is a system designed only for those who want the maximum of economic freedom. The only alternative I see is increasing government regulation.

"Due to inadequate organization and personnel, antitrust umpires in American industry have been able to function in only one game out of 50. If such sporadic administration is continued in the future, the inevitable end is complete industrial regimentation. Today our long continued failure to provide an organization adequate to police American industry has resulted in a situation where combinations in restraint of trade affect every community both great and small.

"Within a single industrial field, to attack one of a series of combinations and leave others alone is simply to give an advantage to those who do not happen to be investigated. We must take such related combinations up all at once if we are to produce economically desirable results."



FRANK MURPHY
Attorney general

THURMAN ARNOLD
Assistant attorney general

SPARKS FROM THE NEWS

NEBRASKA OFFSETS

Promising wildcat showings in two Kansas counties are within 30 miles of the Nebraska state line.

JUNE RECORD

B. of M. estimates project a record June demand for crude and most refinery products, with a 5 per cent gain in motor fuel shipments.

PUBLIC RELATIONS FRONT

Oil scouts who are part of the front line of the industry's operations at their Houston meeting promised cooperation in its public relations program.

TOO MUCH McCLOSKY

The McClosky lime, with new producers rated as high as 4,000 bbl. daily, is voiding all predictions as to Illinois' peak production, which is rapidly approaching 225,000 bbl. daily.

WHY?

A grand jury investigation is scheduled to start Friday in Los Angeles to determine why California operators have been able to maintain relatively stable markets which have been fair to producers, refiners, marketers and consumers.

WILL OTHERS FOLLOW?

The largest marketer in the Middle West takes the lead in restoring the needed normal gasoline and kerosene prices.

MORE SOUTHWEST TEXAS

Tests in Jim Wells and Duval counties promise two additions to the already long list of fields in Southwest Texas.

FOREWARNED

A Texas commissioner threatens to let the state produce wide open in 60 days. Events heralded that long in advance seldom materialize in the oil industry.

BUSY SUMMER

Two grand jury investigations scheduled to start this week and next and an antimonopoly investigation will result in postponed summer vacations for many oil men.

CANADIAN EXPANSION

Reflecting increased producing activity centering in Turner Valley, a new one and half million dollar refinery has started operating at Calgary and two million dollars is to be spent enlarging an existing refinery.

USES 95-OCTANE

Courtesy Pan American Airways

Yankee Clipper completes first scheduled transatlantic air crossing. Gasoline storage capacity, 4,200 gal., equal to one-half tankcar

SUCCESSFUL OPERATION

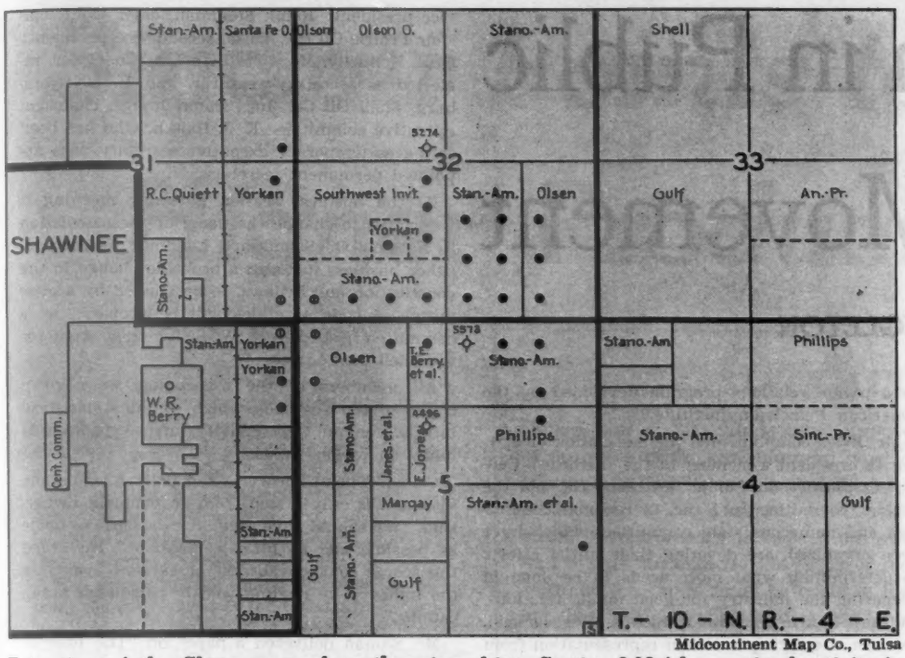
After years of operation a New England gasoline line is to be extended to Hartford, Conn.

1,000-FT. STRIKE

More strikes like that in Kiowa County, and operators who prefer shallow production will flock to Oklahoma. The Kiowa wildcat flowed 100 bbl. of oil an hour.

NEW MEXICO HEADLINE

New Mexico got the headlines this week with a wildcat discovery in Chaves County, first pool for that county; and a Lea County wildcat flowing 450 bbl. in 1 hour.



Midcontinent Map Co., Tulsa

Extension of the Shawnee pool southwestward into Section 6-10-4 has revived activity in that area and may result in a town-lot drilling campaign

Drilling at Shawnee Nearing City Limits

By DAL DALRYMPLE

The recent completion of a 300-bbl. oil well nearly one-half mile southwest of production in the Shawnee pool, Pottawatomie County, Oklahoma, has revived that old area which has been dormant during the past year. Several additional tests have been started and other locations are due to be announced as rapidly as lease and drilling deals can be completed.

The new producer, Yorkan Production Co., Inc., No. 1 Williams, SE NE NE Section 6-10-4, extended production southwestward into the Armourdale addition to the city of Shawnee — an area that is adjacent to but outside the corporate limits of the city. The addition is divided into small tracts of land varying in size from 3 to 12 acres.

In an effort to avert an intensive townsite drilling campaign, with wells located on small city tracts, the Yorkan company has petitioned the Oklahoma Corporation Commission for a 10-acre spacing order. Hearing on the petition was held May 24, and the commission was expected to issue an order as quickly as it could be prepared.

The Shawnee pool was opened in August, 1934, at Stanolind Oil & Gas Co. No. 1 Goodman, SW NE NE Section 5-10-4. It found Earlsboro sand at 4,405-53 ft., and produced 563 bbl. of oil, with 20 per cent water and basic sediment, in the first 21 hours. It was completed in September of that year for potential of 304 bbl. of oil, with 60 bbl. of water daily. Its present potential is 61 bbl. of oil daily. Conservative development followed, the productive area being extended north and east from the discovery.

The current May allowable report of the Corporation Commission listed 23 producing wells in the pool, not including the extension producer. Total May potential of the 23 producers was 1,325 bbl. Pipe line runs in March totaled 26,680 bbl.

There had been no activity in the area for more than a year, but A. A. Thornton of the Indian States Oil Co.—now the Yorkan Production Co., Inc.—believed it still offered possibilities for additional development. He and his associates assembled a block of leases west of the old pool and nearer the Shawnee city limits. They spudded the No. 1 Williams in March, completing it about two weeks ago in Earlsboro sand at 4,437-39 ft., total depth 4,440 ft. In the first 28 hours it flowed 620 bbl. of oil, with 500,000 cu. ft. of gas, and was completed for daily potential of 314 bbl. of oil.

The Go-Ahead Signal

That was the signal for additional tests, carrying the threat of townsite drilling on small tracts.

The Yorkan company started No. 1 Sauter, SE SE SE Section 31-11-4, two locations north of the extension well, and at time of writing was drilling around 4,400 ft., looking for Earlsboro pay. The company also was drilling at about 3,720 ft. at No. 1 O'Connor, NE NE NE Section 6-10-4, direct north offset to the extensioner.

R. Olsen and Santa Fe Oil Co. No. 1 Gillis, NW NW NW Section 5-10-4, had spudded, set surface pipe and was building derrick. The same operator's No. 2 Gillis, SW NW NW Section 5-10-4, east offset to No. 1 Williams, was moving in material.

Henry Marshall and others No. 1 Rose, SW NE NE Section 6-10-4, west offset to the extensioner, and Jennett and others No. 1 McDonald, SW SW SW Section 32-11-4, were reported preparing to start work.

Three locations west of the new well W. R Berry was starting work at No. 1 Keller (Williams), SW NW NE Section 6-10-4, in Block 45, Armourdale addition, said to be less than a 10-acre tract. Indications were that other locations would be announced soon.

Cost of drilling and completing a well in the Earlsboro pay at Shawnee is approximately $37,500, the Yorkan company sets out in its petition for a spacing order.

The greater part of the producers completed in the older part of the pool are in the S½ Section 32-11-4 and the N½ Section 5-10-4. Dry holes have been drilled north of production in Section 32 and south of production in Section 5. Another failure, in NW NW NE Section 5, is offset by producers on the east, north and west sides. All of the older wells, both failures and producers, were drilled on 10-acre locations, except in instances where topographical conditions would not permit.

Geological Deductions

The Yorkan company began work at its extension well after its representatives had made geological surveys, study and investigation of an area embraced in Sections 31, 32 and 33-11-4; the W½ Section 4, Sections 5 and 6, the N½ Section 7 and N½ Section 8-10-4; the E½ Section 1-10-3, and the S½ Section 36-11-3. It is the company's belief, based on its geological studies, that the area mentioned is underlain by an oil pool, with the common source of supply in the Earlsboro formation of the Pennsylvanian series. Ten-acre spacings are necessary, it is claimed, for profitable development of the area, prevention of waste and maintenance of the reservoir energy.

Spacing order or no spacing order, it appears likely that a good many wells will be drilled in the new area unless it is quickly defined by failures. Barring such definition of the productive area, it is probable that drilling will be extended into the corporate limits of the city of Shawnee before the end of summer.

It was reported at Shawnee that tentative plans for the drilling of at least 25 wells this summer have been made, if results of tests already under way justify such activity. Leasing has extended across the north side of Shawnee and as far west as the Catholic college northwest of the city.

Wildcats being drilled in the Shawnee district are contributing to the revival of interest oil men are showing in that part of the state.

W. A. Delaney, Jr., and G. M. Piggott are drilling a wildcat at No. 1 Bramer, SE SW SW Section 25-11-4, northeast of the Shawnee pool, in the Red Hill area. It was below 2,111 ft. at the week-end.

Mason & Nuckolls have started work at No. 1 Lindsey, SW SE SE Section 26-13-3e, near Meeker just across the line in Lincoln County and about 10 miles northwest of Shawnee. Contract was let to C. E. Davis Drilling Co. for a Wilcox sand test. It is two locations west of a well that was completed in 1935 for 500 bbl. of oil daily, but that went dry and was abandoned after producing about 15,000 bbl. Wilcox sand was found in that wildcat at 5,461 ft., and was the productive horizon, although a good showing of oil also was reported in the Earlsboro formation.

J. Garfield Buell No. 1 Madgett, SE SW SE Section 15-10-5, wildcat east of Shawnee and just across the line in Seminole County, south of the

(Continued on Page 34)

Scouts Join in Public Relations Movement

By F. L. SINGLETON

HOUSTON, Tex., May 22.—A public relations program in line with the movement recently started by the American Petroleum Institute to overcome criticism and misunderstanding about the oil industry, was adopted here Saturday at the sixteenth annual convention of the National Oil Scouts Association of America. Adoption of the program followed an address Friday by Axtell J. Byles, president of the American Petroleum Institute, who urged the cooperation of the scouts. Mr. Byles said:

"The citizens of this country, having witnessed some of the preliminary effects of broad-scale experimenting by government, must make momentous decisions respecting business and industry which will probably affect not only these direct sources of their bread and butter but the future welfare of the United States. Repeatedly we are running into the hard cold wall of fact that regardless of whether business and industry are good, bad or indifferent they are the sources of income of most of our people. To punish them to the point of making them inoperative is to punish all of those who with hands or head work in those industries. The thought that an industrial undertaking is being subjected to forcible and drastic reform may be comforting to some, but it is scarcely as substantial as a pay envelope to those dependent upon it.

"It is not my purpose to indicate that business and industry do not in some respects need reform and reforming. The more enlightened industries, through the efforts of their more progressive leaders, their trade associations, and other agencies, constantly are engaged in the task of self-improvement. Possibly this operation proceeds too slowly to satisfy some of the reformers, but so far as industrial productiveness is concerned, many would prefer a living and repentant sinner to a reformed and perfect corpse.

"American business has accomplished remarkable results in selling its products, but has failed dismally to sell itself. The case of the petroleum industry is pertinent. There is no question but that our industry has produced commodities increasing in quality and has sold them in amounts increasing in quantity, while constantly reducing costs. No American industry has rendered more or better service to the American people; few are as little understood and so little appreciated. No other industries have better records of progress, but few have been subjected to more widespread criticism and have so unjustly reaped the sad rewards of public misunderstanding.

"Most of this criticism has originated in the clashing of economic interests within the industry itself. This is understandable in such a highly competitive business and is usually the result of lack of understanding of the over-all picture.

"This industry, seemingly having suffered the extremes of criticism and misunderstanding, is taking a deeper interest in means and methods of improving, of correcting this situation. Recently, these efforts have, in effect, been coordinated in a public relations program developed by the American Petroleum Institute."

Mr. Byles complimented the association on having as president a member of the Institute's Central Committee on Public Relations. He said the central committee, and the 12 regional committees and numerous state committees which have been organized, are devoting their initial efforts to determining what most needs to be done in preparing the industry for good public relations, and how best to go about it. In this effort he said, "we are attempting to obtain representation from every branch and interest of the industry, not only because the immensity of the problem requires many willing hands and heads, but also because, in the final analysis, every branch and interest and individual in this industry themselves must live good public relations if the industry is going to have good public relations."

Large Attendance

More than 375 scouts and others interested in the association were registered at the convention. In addition to Mr. Byles, speakers included Col. E. O. Thompson, chairman of the Interstate Oil Compact Commission and member of the Railroad Commission of Texas, and John R. Suman, vice president of Humble Oil & Refining Co.

C. P. (Jimmy) Chisholm, Houston, assistant division land man and chief scout in the Gulf Coast division for Pure Oil Co., was elected president of the association, succeeding Lee A. Adams, scout for Sinclair Prairie Oil Co. Other officers elected were Charles J. Bradley, Texas Co., Tyler, first vice president; Ralph Steinman, chief scout, Sinclair Prairie Oil Co., Tulsa, second vice president; G. R. Kennedy, Magnolia Pipe Line Co., Tyler, re-elected as secretary-treasurer, and H. L. Eversburg, Shell Oil Co., Inc., Baton Rouge, chairman executive committee. E. J. Raisch, who has been acting as temporary executive secretary, was appointed permanent secretary.

At the business session Saturday morning it was voted to change the name of the association to National Oil Scouts and Landmen Association. Other business included a probable change in the constitution and by-laws, to be studied by a committee. A code of ethics will be prepared by a committee headed by J. W. Selby, chief scout for the Shell Oil Co., Inc.

All members of the association were given copies of the yearbook which contains statistical information on field activity, maps, graphs and tables on various areas.

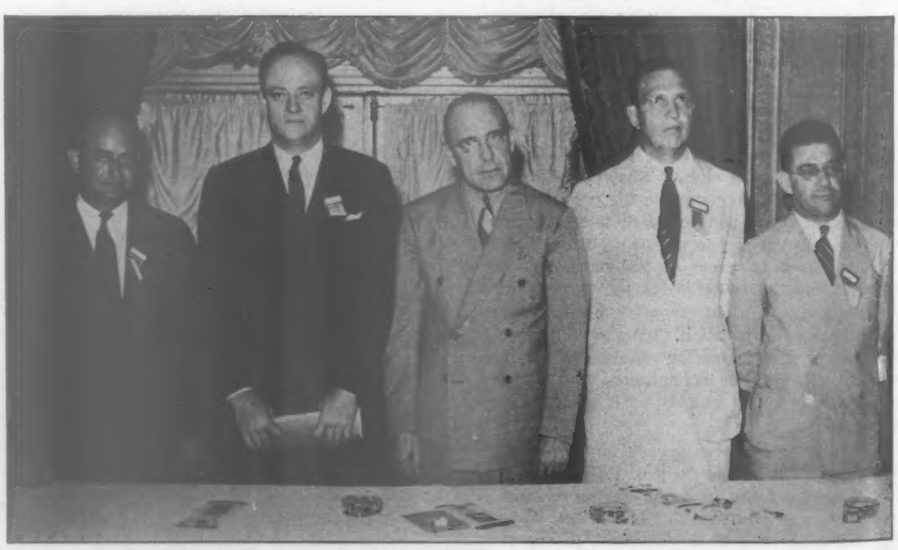
Colonel Thompson warned of federal regulation, saying it is only a step from government ownership. "We should have regulation as close at home as possible and as little as possible." He urged the scouts to keep abreast of current events in the industry by reading weekly petroleum publications.

Mr. Suman delivered a paper on "The Role of Scout or Landman in the Well-Spacing Problem." He advocated holding down drilling cost, and suggested that new fields be developed on 20-, 40- and 80-acre spacing. He urged the scouts to sell to landowners the basic soundness of drilling fewer wells and to inform the public of the seriousness of the present situation.

Following the addresses, the Bureau of Mines picture, "Evolution of the Oil Industry," was shown.

The annual association golf tournament was held at Brae Burn Country Club Friday afternoon. Marvin Jones, Magnolia Petroleum Co. scout at San Antonio, was medalist.

The general committee arranging for the convention and entertainment of delegates were members of the Gulf Coast Oil Scouts Association and included Harry Leyendecker, C. P. Chisholm, Elton Rhine, J. W. Mathews, R. J. Hurt, Hill C. Adams, James I. Riddle, Jr., Francis Evers, H. J. Roberts, P. E. Langley, Eric Beall, Bennie Krahn and Charles B. Leyendecker.



New officers of the National Oil Scouts and Landmen Association: H. L. Eversburg, chairman, executive committee; G. R. Kennedy, secretary-treasurer (reelected); Ralph Steinman, second vice president; C. J. Bradley, first vice president; C. P. Chisholm, president

Sinclair Points to Need of Higher Product Prices

By C. O. WILLSON

The statement of H. F. Sinclair, chairman of the executive committee of the Consolidated Oil Corp., at the annual meeting of stockholders last week, explaining the present disparity between crude oil and product prices has served to focus attention of the industry on the necessity of advancing wholesale and retail prices from their present levels.

The accompanying Sinclair statement comes from the active head of the Consolidated corporation and is a viewpoint backed by 35 years of practical experience in all phases of the industry's operations, including many ups and downs of its markets. Stockholders were informed that the company operated at a loss the first quarter of the year, a development brought about by reduced refinery and marketing revenues.

Recent financial statements show that the position of the Consolidated, one of the largest six operating units of the industry, is representative. Most of the first-quarter statements have revealed decreased earnings ranging from 25 to 75 per cent compared to the same period last year. In general, the largest decreases have come from the larger integrated companies whose operations extend from the production and purchase of crude oil through refining and the marketing of finished products in wholesale and retail channels. Companies which are solely or predominantly producers of crude oil have shown relatively better earnings, although in most cases their net incomes are running substantially under last year.

Several current reports and statistical analyses can be cited in showing the reduced market prices of the industry and their direct relationship to the earning power of small and large operating units.

The Department of Labor compiles the data on which Chart 1 is based. This report, which gives a figure monthly and yearly in relation to the 1926 index of 100, shows that the petroleum product index in 1934 was 50.5. That marked the start of the price recovery from the depression low. The upward trend continued until the latter part of 1937 so that the average for that year was 60.5. During this period prices on all the principal refinery products in both jobber and consumer markets were advanced.

The price decline in most products started in the fall of 1937 and has continued without a sustained change up to the present time. Since that time there have been brief periods when price curves flattened out or showed upturns for brief periods but the general trend has been downward. The price index dropped to an average of 55.9 last year and the first two months of this year declined to the 1934 average of 50.5.

Refinery Revenue

Chart 2 shows what this decline in wholesale prices has meant in refinery revenue. Chart 2 and data are based on a typical Mid-Continent refinery operation, using f.o.b. refinery spot market quotations as reported weekly in The Oil and Gas Journal. The table assumes the following recoveries per barrel of crude oil refined: Gasoline, 25 gal., kerosene, 2.5 gal.; distillate and gas oil, .5 gal., and residual fuel oil, 8 gal. One and one-half gallons represents gas production and loss. The yields are representative of combination skimming and cracking operations in the Mid-Continent field, using 36° gravity crude as charging stock.

Chart 2 shows the same general trend as the Government's wholesale price index. Plant revenues per barrel of crude refined increased steadily from 1934 through 1937. Since that time, due to the gradual reduction in refinery tankcar prices, plant revenue has declined so that the May 1 figure was slightly below the 1934 level. Plant revenue on May 1 was slightly higher than earlier in the year, due principally to higher gasoline prices. The table shows that the gross revenue from a typical refinery operation in Oklahoma selling on the tankcar market is now almost 50 cents per barrel under the 1937 average.

Refinery revenues per barrel of crude will of course vary, depending on several factors, including quality of crude, type of operation, pipe line transportation costs and prices for finished products, as well as differences in operating efficiency. A check, however, indicates that the typical Mid-Continent refinery operation reflects the trend for all refining areas in the United States over the past three years with the exception of California. The West Coast situation has been relatively better because declines in prices for finished products have not been as great as in the eastern part of the United States.

Fifty Cities

These reductions in refinery and wholesale prices have been carried over into the retail price structures of all products.

The Oil and Gas Journal's average retail gasoline prices in 50 representative cities, in cents per gallon, exclusive of federal and state taxes, since 1934 have been: 1934, 13.6; 1935, 13.55; 1936, 14.11; 1937, 14.4; 1938, 13.91, and 1939 (4 months) 13.36. This comparison reveals that average retail gasoline prices so far this year have been 1.04 cents per gallon under the 1937 average and 0.55 cent under 1938 average. These trends in retail station prices also indicate the changes that have been made effective in consumer tank-wagon and posted dealer prices on gasoline.

There have been reductions in wholesale and

(Continued on Page 34)

SINCLAIR STATEMENT:

"Either one of two things must happen. The price of finished products must go up or the price of the raw material must go down. I do not believe that this industry can continue to buy its raw material and sell finished products at a loss. I am in hopes of and we in this company are working for a level for finished commodities that will make it unnecessary to reduce the price of crude. But I must say that if we cannot find a way to increase the price or realize a very small additional margin for finished commodities, there must be a cut in the price of crude. I want to go on record as saying that." Mr. Sinclair added that he would not welcome a reduced price for crude.

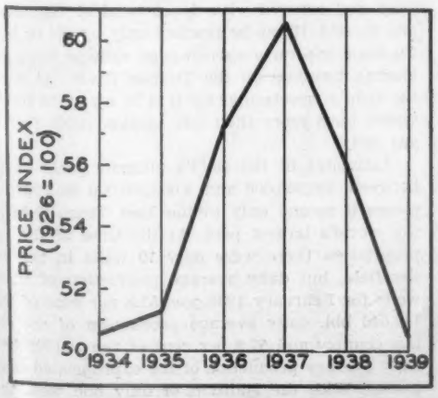


Chart 1—Department of Labor's wholesale petroleum price index: 1934, 50.5; 1935, 51.3; 1936, 57.3; 1937, 60.5; 1938, 55.9; 1939 (two months), 50.5

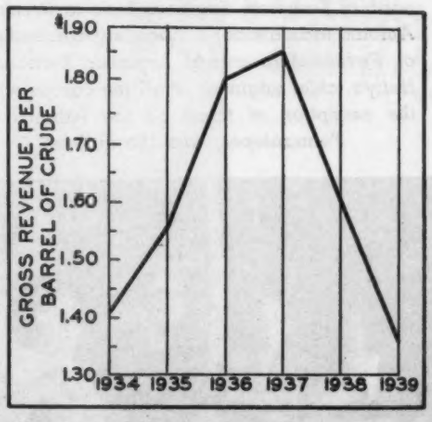
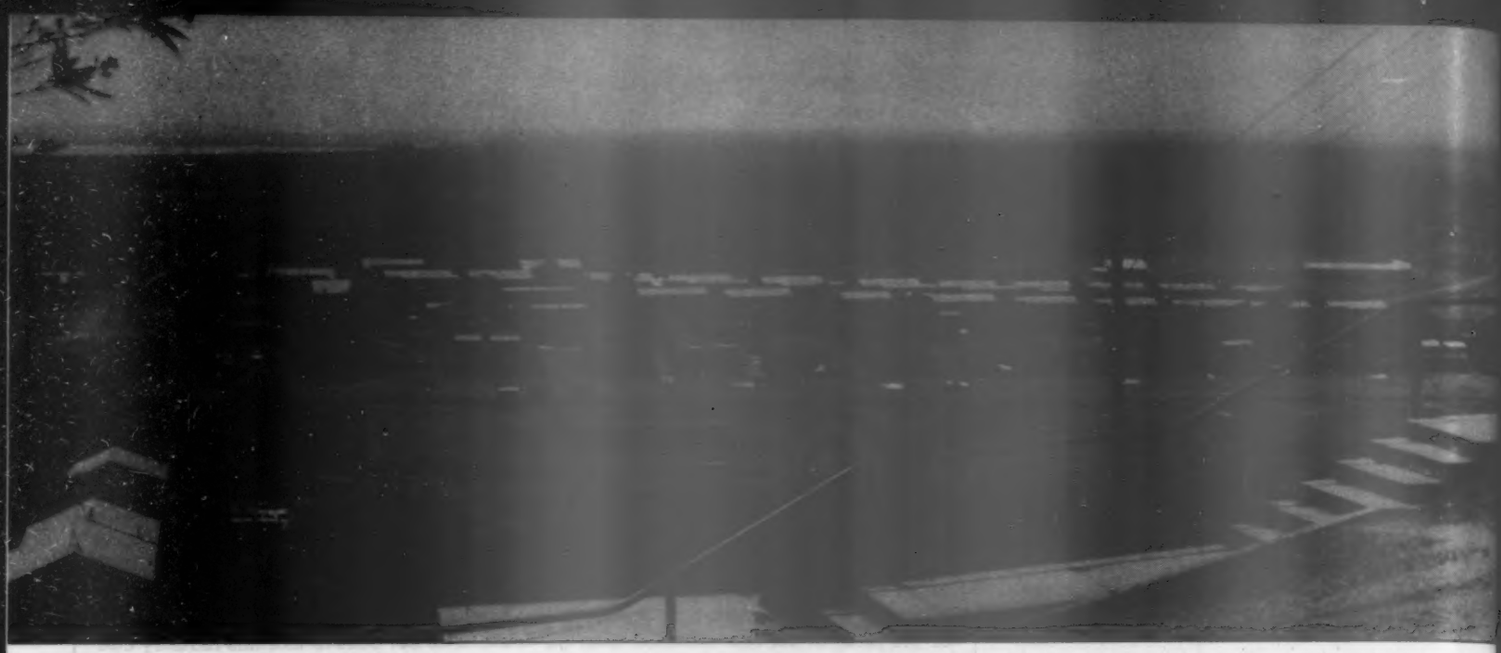


Chart 2—Mid-Continent refinery revenue per barrel of crude: 1934, $1.422; 1935, $1.472; 1936, $1.827; 1937, $1.867; 1938, $1.602; 1939 (May 1), $1.375



General view of the Ebano camp in the heavy oil district to the north of Tampico where oil was first discovered in Mexico

Poza Rica Field Backbone of Oil Industry in Mexico

By RUTH SHELDON

During the year that the Mexican Government has operated the oil properties which it expropriated March 18, 1938, from British and American companies, production has been maintained at 75 per cent of what the former companies produced during the previous year's operation and new development work is now under way.

The expropriated properties at the time of the expropriation were producing a daily average of 130,000 bbl., of which the Compania Mexicana de Petroleo "El Aguila" S.A. (Royal Dutch-Shell) had approximately 72 per cent; the Huasteca Petroleum Co. (Standard Oil Co. of New Jersey) approximately 19 per cent; the Sinclair interests approximately 6 per cent; and the remaining 14 companies which were expropriated approximately 3 per cent of the total. The production of these companies at the time of expropriation represented about 90 per cent of the total in Mexico.

Lunching at Panuco in the heavy oil district north of Tampico: Engineer J. de la Riviere; Antonio Maldonado; E. Lugo, superintendent of Reventadero camp; Engineer Fernando Heftye, chief engineer of all the camps with the exception of those on the Isthmus of Tehuantepec; and the author

SECOND OF SERIES

The accompanying article dealing with production operations is the second of a series of three by Miss Sheldon describing developments in Mexican oil operations since the properties were expropriated by the government in March 1938. The third article will be concerned with marketing conditions.

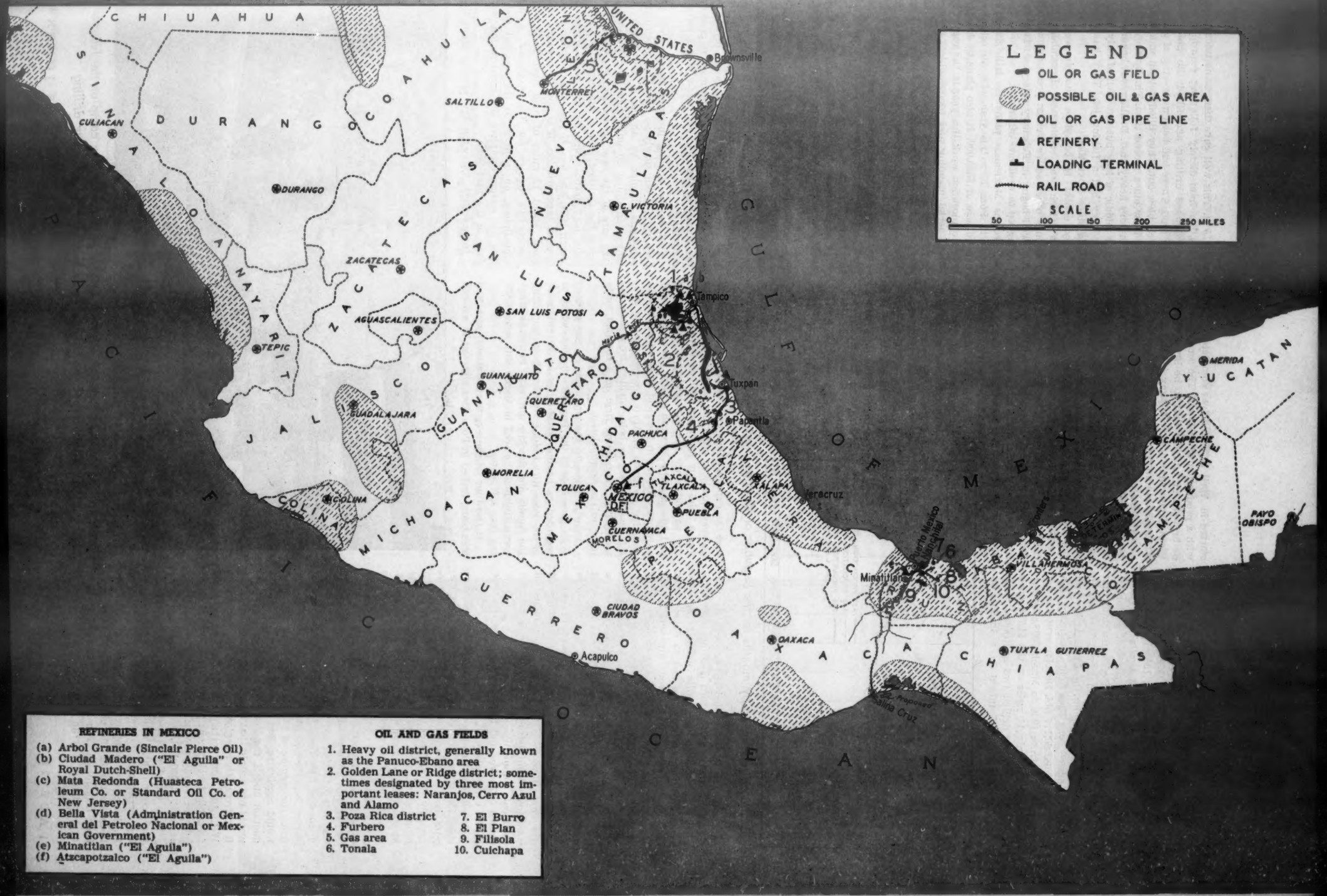
Miss Sheldon gathered the material for the series on a two-month trip to Mexico during which she visited fields and refineries as the guest of those now in charge of oil operations in Mexico.

When 18 companies are merged into one the job of organization is naturally a difficult one. Engineer Vicente Cortes Herrera, general manager of the new government oil company, Petroleos Mexicanos, had a task on his hands which for a year has kept him in the office every night until midnight. Working for him as manager of production he had Engineer Jesus de la Garza Cardenas, a petroleum engineer graduate of the University of California. Engineer de la Garza had been a government oil inspector and at the time of the expropriation was working for the Dowell Chemical Co. in Mexico. He was familiar with all the fields and was in a position to know how to handle the problem of cutting down production and in what fields.

Mexico's oil fields, all of which are scattered along the eastern coast, can be classified into four general divisions—the heavy oil district to the north of Tampico; the famous Golden Lane or Ridge district to the south of Tampico; the Poza Rica district about 35 miles south of the last link in the Golden Lane; and the southern district in the Isthmus of Tehuantepec. The productive area of all these fields combined is approximately 158,000 acres.

For practical purposes the Poza Rica field is really the Mexican oil industry and was before the expropriation. This field which is about 130 miles south and slightly east of Tampico, is the most picturesque in Mexico. The country is extremely hilly and covered with dense tropical vegetation and forests. It can be reached only by air or by a 2½-hour trip on a narrow-gage railway from the loading terminal on the Tuxpan River. At night the field is spectacular for it is lit up by 15 flares, which burn more than five million cubic feet of gas daily.

Estimates of the field's ultimate yield range between 500,000,000 and 1,000,000,000 bbl. which places it second only to the East Texas field as the world's largest pool. At the time of the expropriation there were only 19 wells in the entire field, but daily average production of these wells for February 1938 was 51.8 per cent of the 143,646 bbl. daily average production of the entire country and 57.2 per cent of the 130,025 bbl. daily average production of the expropriated companies. With the addition of only one well, the Poza Rica field was supplying 66.8 per cent of the 95,591-bbl. daily average production of Petroleos Mexicanos for February 1939. It is not only the field's prolific production and possibilities that make it the backbone of the Mexican indus-



REFINERIES IN MEXICO

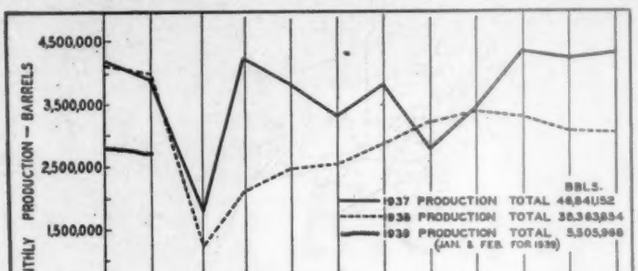
(a) Arbol Grande (Sinclair Pierce Oil)
(b) Ciudad Madero ("El Aguila" or Royal Dutch-Shell)
(c) Mata Redonda (Huasteca Petroleum Co. or Standard Oil Co. of New Jersey)
(d) Bella Vista (Administration General del Petroleo Nacional or Mexican Government)
(e) Minatitlan ("El Aguila")
(f) Atzcapotzalco ("El Aguila")

OIL AND GAS FIELDS

1. Heavy oil district, generally known as the Panuco-Ebano area
2. Golden Lane or Ridge district; sometimes designated by three most important leases: Naranjos, Cerro Azul and Alamo
3. Poza Rica district
4. Furbero
5. Gas area
6. Tonala
7. El Burro
8. El Plan
9. Filisola
10. Cuichapa

try but also the fact that it is the best crude produced in Mexico. It is a paraffin base oil with a gravity of about 31° A.P.I. with a high percentage of gasoline compared to other Mexican crudes.

The field was discovered in 1930 by the Compania Mexicana de Petroleo "El Aguila" S.A. (Royal Dutch-Shell) after several years of geological study and exploration. Aguila officials state that the company spent approximately $20,000,000 in discovering and developing the field. At the end of 1938 the entire Poza Rica field had produced a grand total of 68,986,117 bbl. Development has not been rapid for from 1930 to March 1938, the Aguila had drilled only 14 wells on the 14,738 acres it controlled. It had drilled two additional wells on an agreement with Stanford Co., a Sinclair organization, which controlled 188 acres in the center of the field. The Stanford holdings were completely surrounded by Aguila holdings and, to avoid an offset drilling race and to develop the field in the most advantageous manner, Aguila agreed to drill the wells receiving 68 per cent of production and paying a corresponding percentage of the drilling and producing costs. Aguila gave Stanford 32 per cent of the production in its Poza Rica No. 4 and the agreement was to extend to further drilling to the south in the Papantla area in which both Aguila and Sinclair held concessions. The only other company with holdings in the Poza Rica district was the government oil company, Administracion General del Petroleo Nacional, commonly called A.G.P.N., which controlled 567 acres and had three wells at the time of the expropriation.



Crude oil production by months for the Republic of Mexico

Development had been slow because a considerable amount of the Poza Rica area was in dispute, being claimed by both Aguila and the government. However, a few months prior to the expropriation Aguila had signed a contract with the Mexican Government whereby all of Aguila's holdings in the district which were in dispute were given clear title. In return, Aguila agreed to drill 64 wells in which the government would receive 35 per cent interest without participating in drilling or production costs. The well spacing agreed upon was 2,460 feet. Aguila also guaranteed that during a period of five years, beginning a year from the signing of the contract, the government would receive no less than 12,600 bbl. daily production and if the Poza Rica district production would not supply that amount Aguila would make it up from other regions where it had production. With this contract signed Aguila was prepared for a big development program which would have increased daily production by the end of 1938 by at least 50,000 bbl.

Now that the properties are being handled by the government, the development program is being carried on, but very slowly and very cautiously. Since the expropriation to date, six wells have been started in the entire field and three have been brought in. The first well brought in after expropriation was an A.G.P.N. well which was started in April 1938, and was completed in June with a production of 3,000 bbl. The second well to be brought in, and the first to be brought in by the new government oil company (as the A.G.P.N. although administratively under Petroleos Mexicanos operates as an affiliate) was started July 28, 1938, and completed April 10, 1939, with an initial production of 2,772 bbl. daily. The second well to be brought in by Petroleos Mexicanos was started August 3, 1938, and completed April 19, 1939, with 4,000 bbl. daily initial production.

The first wells drilled in Poza Rica required from six to nine months to complete, although the formations are fairly soft and the drilling easy from that viewpoint, there is danger of blowouts due to a gas pressure of about 3,000 lb. per sq. in. There have been a number of spectacular blowouts in the drilling history of the field. It is comparatively deep drilling, the wells averaging between 6,000 and 7,000 ft. However, as the drillers became more familiar with the field the drilling time was reduced to between three and four months.

Petroleos Mexicanos has completed only two wells since the expropriation, taking nine months' time each to drill, because the Mexican drillers are not experienced, having been only helpers before the expropriation, and the policy has been to go very slowly in order not to have trouble or to lose a hole. Four American drillers have been on the payroll since the expropriation supervising and advising the Mexican crews. There has been only one blowout in the field since expropriation and that occurred in April this year on an A.G.P.N. well which is being drilled by a San Antonio, Tex., contracting firm on a contract made prior to the expropriation.

About 3 miles to the southeast of the present Poza Rica field in the Papantla district, which is regarded as having possibilities as an extension of the Poza Rica field, a well had been started by the Aguila and Sinclair interests. Petroleos Mexicanos finished the well in March this year, drilling into salt water.

At the time of the expropriation only one well was being drilled in Poza Rica and was at a depth of 6,315 ft. This well gave them some uneasy moments, as immediately following expropriation, they stopped drilling and filled the hole with heavy mud. There had been a showing of gas and the well blew out. They filled it with mud again but it blew out a second time. Finally they killed it with very heavy mud. Drilling was begun again in the middle of May but they drilled only 615 ft. before they had a fishing job. They have been fishing since November.

They expect to complete another well this month which was commenced December 1938. The only other active well at present is an A.G.P.N. well begun in February this year. They are rigging up to drill one other test.

Petroleos Mexicanos plans to drill six more wells in Poza Rica this year with an estimated expenditure of $588,000. It also plans to do some more exploration work this year in the region by doing aerial mapping and topographical surveying of the Papantla-Tecolutla-Nautla area of approximately 300 square miles to the south of Poza Rica. It will also continue toward the south the gravimetrical survey left unfinished by the expropriated companies in the Papantla region. This will serve as a preliminary for future seismograph surveys.

The production in Poza Rica is now almost what it was prior to the expropriation. In February 1938, the daily production, including the A.G.P.N. wells, was 74,373 bbl. In February 1939, the daily production was 63,850 bbl. The wells are shut in or produced according to export demands. The average daily production in September 1938, the biggest export month, was only 182 bbl. less than that of February 1938, the month before the expropriation. An effort is being made to preserve the energy in the field and a low oil-gas ratio is maintained.

Just as the drilling program in the field has been carried out slowly so have the construction programs planned by Aguila. A new battery of tanks containing 20 units had been planned to take care of the new production. Petroleos Mexicanos has finished four of the units. A topping plant of 7,500-bbl. capacity had been started in March 1937, and was 47 per cent complete at the time of expropriation. It is now 70 per cent complete. About 10 miles of road have been built. Twenty-five houses for the workmen, a new schoolhouse, an addition to the hospital and a first aid station complete the construction work done in the past year.

Immediately following the expropriation they

Francisco Inguanzo, production engineer in charge of the El Plan camp on the Isthmus of Tehuantepec, examining samples of a new well now drilling

were without adequate fire protection at Poza Rica and were particularly worried as to what they would do in case of fire in the battery of storage tanks as there was no place to which the oil could be by-passed. Two storage tanks of 30,000-bbl. capacity each were brought from the Golden Lane district and installed 3 miles from the camp. They connected the flow lines to the tanks to a 12-in. line to the new storage so that in case of fire the oil could be by-passed until the wells were shut in. It cost about $13,000 in material and labor to do this but they considered it cheap insurance at the time. They are now insured with a Mexican company and when the new battery of tanks is completed, fire worries at Poza Rica will be at a minimum.

About 8 miles southwest of Poza Rica is the Furbero field, an ex-Aguila property, which was discovered in 1904 and which had produced to the end of 1938 a total of 2,268,474 bbl. There was only one well at the time of the expopriation and it was producing about 3 bbl. a day and is still producing at that rate. Aguila had intended to plug and abandon the well but Petroleos Mexicanos is continuing to produce it because if any new drilling is done in nearby territory the well can supply fuel. The narrow-gage railway which serves Poza Rica was originally built from Tuxpan to Furbero and it is an amusing commentary that for 26 years geologists and oil men unconsciously rode over the world's second largest oil pool.

Southern District Presents Problem

At present the southern district in the Isthmus of Tehuantepec presents the biggest problem to the production department. There are five fields in this district, the concessions for which cover about 183,000 acres but of which only 3,800 acres are under production. Only four of the fields—Tonala, El Burro, El Plan, and Filisola—were producing at the time of the expropriation and these were owned by Aguila. The fifth field, Cuichapa, owned by Richmond Petroleum Co., a subsidiary of Standard Oil Co. of California, was a concession of 10,700 acres with four oil wells and one gas well. The wells were drilled between 1935 and 1938 but after being tested had been shut down. Richmond had built two 10,000-bbl. tanks and had planned to build a pipe line to the Coatzacoalcos River so the oil could be shipped. The wells were estimated to have a potential of 5,000 bbl. daily each. Petroleos Mexicanos will have to reexplore the field to ascertain its possibilities. A 3-mile pipe line is now being built from the field to connect with the ex-Aguila pipe line from its fields to its Minatitlan refinery. Then the wells will be opened.

The daily production of the Aguila fields in February 1938, was approximately 24,000 bbl. The daily production of the fields for Petroleos Mexicanos in February 1939, was approximately 20,000 bbl. The decline in production has not been a result of the expropriation, but the total production of the fields has been declining at the rate of several hundred thousand barrels a year for the past few years. Aguila had planned to develop further the El Plan field whose limits are not yet defined and had also done preliminary exploratory work in the State of Tabasco to the east. As a result of this work it was convinced big new fields would be discovered. Since the expropriation Petroleos Mexicanos has completed four tests in the Isthmus. Two of them—one at El Burro and the other at El Plan—were dry holes. The other two, which were at El Plan, are producing 1,050 bbl. and 250 bbl. At present two wells are being drilled in El Plan and another just outside the field. They plan to drill six more wells at El Plan this year with an estimated expenditure of $330,000. However, the six wells to be drilled at Poza Rica will be given preference, so if the full amount of this year's appropriation is not available fewer wells will be drilled at El Plan.

A seismograph crew is already at work in the State of Tabasco northeast of the present Tonala field. It is planned to make another survey deeper into the state at the end of the year. They also plan to do aerial surveying, topographical surveying and structural core drilling in this area this year. The wildcat which they plan to drill in Tabasco will cost about $100,000.

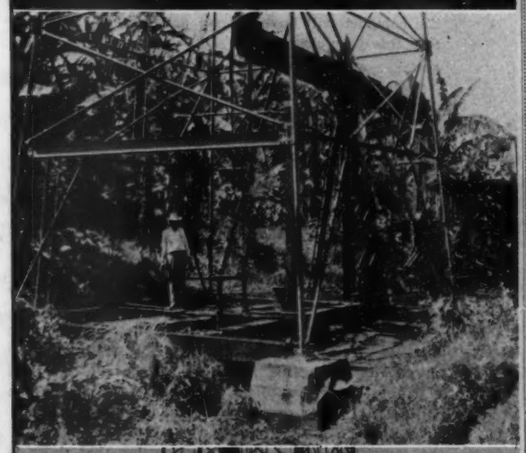
Since the expropriation the greatest operating difficulty in the Isthmus, where almost all of the wells are on the pump or are being produced by injection of gas, has been the inability to obtain replacement parts—principally exhaust valves—for compressors. In the face of the unofficial equipment boycott, replaced could not be bought and since the compressors are all of British and American make, spares could not be obtained in Germany. However, they used German steel and had the valves manufactured in Monterrey. These lasted only 150 hours whereas the life of a standard make is from 5,000 to 10,000 hours. They have now obtained scraps of Norwegian steel and are manufacturing the parts in their own machine shops. These parts have approximately the life of the standard ones.

The crude processed in these fields varies considerably. Tonala and El Burro produce crudes of a paraffin base of 29.5° A.P.I. gravity and of a mixed base of 27.7° A.P.I. gravity. The El Plan field produces two crudes, one of paraffin base with a 28° A.P.I. gavity and the other, which is nonwaxy, of 23° A.P.I. gravity. The Filisola crude of paraffin base has an A.P.I. gravity of 22.3°.

The famous Golden Lane or Ridge district has given Petroleos Mexicanos no trouble at all since the expropriation. It is called a lane because the fields extend for about 50 miles on a narrow crescent shaped ridge along the coast between Tampico and Tuxpan. The history of the district shows why it is called Golden as it has had single wells which have produced 94,000,000 and 86,000,000 bbl., some of them with a daily production of 250,000 bbl. The cumulative production of the Golden Lane from its discovery in 1907 to the end of 1937 was 1,014,707,127 bbl. Although the district is divided into 13 fields, all but one are producing from the same limestone formation. The crude obtained from this area has a gravity varying between 20° and 23° Be. and it is a paraffin base crude yielding a great variety of products but is particularly good as a source for the manufacture of paraffin.

Since expropriation there have been no particular problems in this district and operation has been merely a question of shutting the wells in or opening them up according to refinery demands. The field has been kept fairly well shut in as there is not a great demand for its oil. Just before the expropriation the average daily produc-

(Continued on Page 104)



The picture at the top shows a night view of the Poza Rica camp with the flares lighting up the absorption plant and the pump house. Beneath this picture is seen the superintendent's house in the Poza Rica camp, and beneath it the office employes' dormitories. Second from bottom is an old pumping well at Francita camp in the Isthmus of Tehuantepec being inspected by the camp superintendent, Louis Galland. The picture at the bottom is of the Tajin well, a few miles south of the Poza Rica field, begun by Aguila and drilled into salt water by Petroleos Mexicanos. In the right background is an Aztec pyramid recently uncovered

STATE CAPITALS

Michigan State Capitol at Lansing

MICHIGAN

THE MICHIGAN STATE SENATE on May 19 approved the house concurrent resolution authorizing Gov. Luren D. Dickinson to enter into oil and gas conservation agreements with states now members of the Interstate Oil Compact Commission. The measure also authorized the governor to appoint a representative to attend all meetings of the compact group.

The resolution added: "It is understood that it is not the purpose of the agreement or compact to authorize the states joining the same to limit the production of oil or gas for the purpose of stabilizing or fixing the price thereof, or to create or perpetuate monopoly, or to promote regimentation, but that the purpose is restricted to conserving oil and gas and preventing the avoidable waste thereof within reasonable limitations."

ART L. WALKER, SECRETARY of the Interstate Oil Compact Commission, whose headquarters are in Oklahoma City, expressed himself as quite hopeful that the compact will have several new state members before this year closes.

ILLINOIS

STRONG OPPOSITION to any oil proration law for Illinois at this session of the legislature was voiced last week in the report of the general assembly's special committee investigating the Illinois petroleum industry.

The committee made no recommendation for state taxes on oil, and proposed that local authorities assess for taxes only that acreage which is producing.

Listing six recommendations as having "little or no dissent" from persons testifying at five hearings which the committee held, the report said that all witnesses were "definitely opposed to the imposition of any tax which would include undeveloped leases."

"A close, deliberative study of all the evidence by the committee has led to the conclusion that there is no necessity at this time for enacting laws regulating proration, economic conservation and ratable taking," the report declared.

"It is the belief of this committee that such laws would . . . operate without justification to curtail an expanding industry. The committee bases its conclusion upon the fact that there is no evidence either of overproduction of oil or disruption of the price market and no immediate fear of either of such consequences."

The six "agreed" recommendations were:

"1. A law requiring oil producers and operators to make and file reports with the geological survey division and the mines and minerals department showing the character and depth of formations penetrated in the drilling of oil wells.

"2. An amendment to the present law relating to the plugging up of dry or abandoned wells. (The present law was described as inadequate and unsuited to existing conditions.)

"3. A law requiring the drilling of offset wells for the purpose of preventing inequitable conditions among adjoining leaseholds and royalty owners.

"4. An amendment to the mechanics lien law to provide liens for work performed and materials furnished in the drilling, production and shooting of oil wells.

"5. A law providing that meters be placed upon pipe lines, registering the amount of oil taken from the well, and report to be filed with the royalty owners of the amount of oil produced and taken by pipe line companies.

"6. A law requiring garages, filling stations and other retail outlets of oil and gas to display prominently a placard stating that it sells (or does not sell) Illinois petroleum and by-products of Illinois crude oil and stating the percentage of Illinois crude oil, if any, included in the commodity."

PENNSYLVANIA

A REPUBLICAN BILL abolishing the Democratic-established oil industry investigation commission was approved by the Pennsylvania Senate on May 18.

The vote was 26 to 20. One Democrat, William J. Eroe of Lawrence County, voted with the majority. The measure went to the house.

The commission was conceived in 1937 and set out with a $50,000 fund to determine if state regulation of the industry was required to end what is called "malpractices."

CALIFORNIA

OPPONENTS AND PROPONENTS of the various oil control bills introduced in the California Legislature have reached the point where it is doubtful whether any legislation can be enacted at this session. If no action is taken before adjournment it will be 1941 before any further attempt can be made to regulate crude oil production by statute. It has become evident that something must be done to tie down the lid at Montebello due to gas waste, and present indications point to the probability that the city of Montebello and the State Department of Natural Resources will step into the picture within the next few days. Notice has been served to immediately cease blowing natural gas into the air, and the operators who have consistently prevented unanimous consent to reduce field production to the allowable are now in the position of having to ask the others to buy gas from their wells in order to comply with the law.

TEXAS

A GRADUATED TAX EXEMPTING STRIPPER wells from any increase would not be unconstitutional, Atty. Gen. Gerald C. Mann stated in an opinion late last week. It was generally presumed that a graduated tax was not possible under the Texas Constitution, but this presumption is erroneous, Mr. Mann said, and the bill now pending in the house providing for such a graduated tax would not be illegal. The new bill would levy a tax of 4 cents per barrel from wells producing more than 20 bbl. daily, 3½ cents on oil from wells producing between 10 and 20 bbl. daily, 3 cents per barrel from wells producing between 5 and 10 bbl. daily, and 2¾ cents per barrel from wells producing less than 5 bbl. daily. However, if the market price of the oil is in excess of $1 per barrel, the tax shall be on a percentage basis; that is, 4, 3½, 3 and 2¾ per cent.

"We believe that the courts of this state would hold that this new act sets up a reasonable classification, and that it is clearly valid and constitutional . . . We feel that there is a valid justification in the legislature levying a higher tax per barrel on the production of oil from large producing wells than on the production of oil from small producing wells. In most cases it costs less per barrel to produce the oil from large 'producers' than it does from small 'producers.'

"Another difference is found in the actual operation of large 'producers' and small 'producers.' In case of large 'producers' a greater per cent of the wells are 'flowing wells' than in the case of the small 'producers'; and consequently there is a difference in the operation of the wells."

COMMISSIONER JERRY SADLER in a prepared statement issued late last week informed other oil-producing states that unless they joined in curtailing production, Texas, at the end of its present order, June 1, might open its wells. His statement was as follows:

"The Texas Railroad Commission has received definite information that an over-supply of oil is piled up at the Texas seaboard, most of this crude stock coming from Louisiana and shipped into this state for the most part by major oil companies. In addition, oil is coming into East Texas from Illinois, which situation discriminates against Texas producers.

"The principal feature of this extraordinary condition is that continuation is certain to bring about chaos in the Texas oil industry, which the commission has for a long time been seeking to avoid for the benefit of the whole. While some oil-producing states prorate and some do not, none of them carry out the proration laws to the extent that Texas does, so the time for a showdown must not be put off much longer. Texas should not continue to hold the bag much longer.

"We have prorated and have had Saturday and Sunday shutdowns. We have done everything to protect the industry that the law permits. The major companies should feel it incumbent upon themselves, after receiving such excellent cooperation from the Texas commission, to ask the Louisiana authorities to reduce their allowable appreciably.

"I recommend that the Texas Commission, for a period of 60 days, continue to fit proration to market demands, reducing allowables where justified, but at the end of that 60-day period unless Louisiana or any other state involved, does not effectively and promptly cut their allowables and observe the proration laws so as to stop piling up of oil from other states in Texas, then the Texas Commission should issue an order for wide-open production for all fields. Then, perhaps we can obtain cooperation from other states, including Louisiana, and from the major oil companies."

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Turning the Tables

The oil industry in the next few weeks is to be afflicted with another series of investigations. While the oil business seems to be in the center, it by no means occupies the whole stage, for many other industries are facing the same ordeal.

In fact, it seems that any business which has so conducted its operations that it has been able to stand on its own feet without the benefit of subsidies must be given the Washington X-ray.

Apparently, official Washington is suspicious of every business organization which has been able to maintain a measure of operating success in these trying times. The idea seems to be that something must be wrong with an industry that does not run to Washington for government aid.

Washington still cannot understand that these industries produce the tax revenues which enable the Government to carry on its political philanthropies.

This suggests a new type of investigation which apparently has never occurred to the political mind and probably never will until attention is called to it forcefully by those directly affected.

Why not a detailed investigation of what is being done with the increasing tax payments? The actual situation in this field is shown in a report made by the head of a major oil company to company employes last week.

This report reveals that of every dollar collected from consumers by that company last year 23 cents went to the tax collector.

It shows that, in contrast with these tax payments, the employes received 15.6 cents of the customer's dollar and the stockholders less than 4 cents.

The tax collections, in fact, were approximately the same as the payments made to crude oil producers.

The supposed basis for all these investigations is the protection of the consumer. Surely no one will contend that the employes' share of the consumer's dollar is out of proportion; that the stockholders are getting excessive returns on their investment, or that too much is allocated to other company expenses that enter into the price charged to the consumers.

The truth of the matter is that in the case of this company and other companies all of these expenditures are gone over with a fine-toothed comb with the purpose of gaining the greatest operating efficiency possible.

There is no such protection for the consumer on the expenditures out of taxation.

True, a large part of this money is appropriated for the construction and maintenance of improved highways, but there is evidence that this money is not expended with the same care as is exercised by the companies in drilling wells, and all other phases of their operations.

The same situation applies to the other billions of governmental expenditures which are straining the country's taxing and lending capacity.

There is a general impression that the costs of operating political machinery, the creation of useless jobs and many other developments of similar character all come out of the consumer's dollar.

Those in Washington worthy of the name of statesman should welcome such an investigation, realizing that the Government's circular activities of recent years have little to show in actual accomplishment.

The oil industry's tax bill has passed $1,250,000,000, more than 10 per cent of all the taxes paid in this country. It is the logical industry to take the leadership in an investigation which will reveal to the country the inefficiency and waste which are responsible for the postponement of business recovery to normal levels.

Petroleum Chemistry Feature of A. I. C. E. Meeting

AKRON, Ohio. — Petroleum chemistry occupied an important spot in the thirty-first semiannual meeting of the American Institute of Chemical Engineers held here which attracted about 500 chemists. Such subjects as heat transfer, distillation, filtration, gas absorption and other diffusional processes were discussed by chemical engineers, industrialists, educators, and officials of the state and federal services.

Presiding over the three-day session was Dr. Webster N. Jones, president of the institute and dean of engineering at Carnegie Institute of Technology, Pittsburgh, Pa.

Perfection of a method of making an improved fuel from lignite was announced in a paper by E. P. Schoch, director of the Bureau of Industrial Chemistry at University of Texas.

By subjecting a mixture of the lignite and light petroleum oil to heat in a closed vessel, large quantities of water contained in the original mined product are removed, Professor Schoch explained. The resulting product is comparable to soft coal in heating value. The new process has not been operated on a commercial scale. The speaker estimated, however, that a plant can be constructed to produce 231 tons of lignite fuel a day at a cost of $3.15 a ton. The product will have a heating value of 11,000 B.t.u. per pound and will compare with coal at $4.05 a ton and a heating value of 14,000 B.t.u. per pound.

Professor Schoch reported on the final stage of the developments which consisted of overcoming technical difficulties as well as the danger of fire at high temperatures with large amounts of light oil which is chiefly naphtha.

Tribute was paid to Dr. George Granger Brown, professor of chemical engineering at the University of Michigan, who was awarded the 1939 William H. Walker Medal. The medal is awarded annually for an outstanding contribution to chemical engineering literature published in the Institute's Transactions by a member during a three-year period prior to the award. In presenting the medal, Dr. Jones cited three of Dr. Brown's papers on thermodynamics and distillation as of exceptional merit.

Dr. Brown was graduated from New York University in 1917 and received his doctor's degree from the University of Michigan in 1924. He has been on the chemical engineering teaching staff at Michigan since 1920. Internationally known for his researches on motor fuel and the properties of natural gasoline and petroleum, Dr. Brown has served as consultant for Texas Co., Sinclair Refining Co., Dixie Refining Co., Universal Oil Products Co., Socony-Vacuum Oil Co., Inc., Sun Oil Co., and Phillips Petroleum Co.

In a paper on "Design Calculations for Gas Absorption Towers," Edwin M. Baker and James H. Wiegand, professor of chemical engineering and a graduate student, respectively, of the University of Michigan, presented a graphical method for design calculations for a single solute gas. The method is based on the Whitman and Keats two-film theory and the use of film coefficients. The method reveals the true picture of driving forces and the relation between gas and liquid resistances. The effects of presence of solvent vapors on driving forces and gas film coefficients were discussed and illustrated by reference to a specific problem.

John Griswold, assistant professor of chemical engineering, University of Texas, presented a paper on "Mechanism of Paraffin Wax Filtration—Continuous Drum Filter Dewaxing of Cylinder Stocks in Propane Solution." The paper included commercial data on dewaxing in propane solution of three Mid-Continent cylinder stocks. Under the conditions studied, the author pointed out, the throughput is not greatly affected by wax content, rate of chilling and drum rotational speed. Observations led to the conclusion that wax plugs the filter septum, which then offers the controlling resistance to filtration.

Frank J. Jenny, of the M. W. Kellogg Co., New York, prepared a paper giving a graphical solution of problems in multicomponent fractionation. He presented a new design method for the complete solution of problems in multicomponent fractionation based on a graphical solution which is comparable in simplicity to the McCabe-Thiele method for binary mixtures. In addition to the graphical determination of the number of trays, the method inherently offers a simple means for determining a suitable design reflux ratio. Equilibrium curves are drawn for one component only in the stripping section and for one component only in the fractionating section. The method eliminates a large number of tray calculations as well as the tedious rematching of feed tray compositions which is necessary in the conventional algebraic tray-by-tray method of calculation.

N.L.R.B. Conducts Hearing On Mid-Continent Strike

After a 9-day trial the 93 strikers charged with unlawful assembly at the Mid-Continent Petroleum Corp. refinery in West Tulsa were acquitted in Tulsa Common Pleas Court May 18. Trial of 36 strike leaders indicted for conspiracy and riot will probably be postponed until the District Court meets in September. A hearing is being conducted by the National Labor Relations Board on a complaint filed by the Oil Workers International Union against the company. Theodoric R. Bland, Kansas City, has been assigned to the hearing as examiner in charge.

Carbon Black Shipments Drawing Upon Stocks

AMARILLO, Tex.—Shipments of carbon black continue ahead of production in the Texas Panhandle. Stocks have been drawn down since September. Production had been running in excess of shipments before that time.

Standard of New Jersey Executive Conference

Ranking executives and department heads of Standard Oil Co. of New Jersey and its operating subsidiaries and affiliates in this and other countries met in annual conference last week at Seaview, N. J. There were several hundred men in the week-long sessions representing every country and department of the company. The annual meeting is, in effect, a coordinating conference at which past results are reviewed and plans for the future discussed.

Illinois-Indiana Petroleum Conference Program

Lee Mulvihill, executive secretary, announces that the seventh annual petroleum conference of the Illinois-Indiana Petroleum Association is to be held in Robinson, Ill., Saturday, June 3.

J. Edgar Pew, vice president of the Sun Oil Co., of Philadelphia, is to be the guest speaker. Approximately 600 oil men are expected to attend. The program follows:

Morning Session, Chairman—C. C. Carroll.

"The Devonian Formations of Indiana"; (*a*) The Structural and Isopachous Map of the Devonian, J. R. Harris, geologist, Conservation Department, State of Indiana. (*b*) Subsurface Stratigraphy from Well Cuttings and Devonian Outcrops of Clark County, Prof. Ralph Esarey, state geologist, Conservation Department, State of Indiana.

"The Devonian and Silurian Systems in Illinois with Reference to Oil and Gas." (*a*) Subsurface Distribution and Stratigraphy, L. E. Workman, subsurface geologist, Illinois State Geological Survey, Urbana. (*b*) Oil and Gas Possibilities, Dr. Alfred H. Bell, geologist, Oil and Gas Division, Illinois State Geological Survey, Urbana.

"Geophysical Methods in the Exploration for Oil," Dr. Fred Oudt, geophysicist, Shell Oil Co., Inc., Centralia, Ill.

Afternoon Session, Chairman—Alex U. McCandless.

"Gas Injection Methods of Increasing Recovery," R. J. Sullivan, division engineer, Carter Oil Co., Mattoon, Ill.

Discussion—A. C. Dahl, exploration engineer, Shell Oil Co., Inc., Centralia, Ill.

"Core Analysis Theory and Practice," E. S. Shakley, chief exploration engineer, eastern production area, Shell Oil Co., Inc.

Discussion—James A. Lewis, Core Laboratories, Inc., Dallas, Tex.

"Multiple Sand Production Practices," Bart DeLaat, division production engineer, and W. M. Saxon, production engineer, Pure Oil Co., Olney, Ill.

"Welded Casing Practices," Prof. G. M. Stearns, assistant professor, petroleum engineering, the University of Oklahoma.

Discussion—C. G. Harrington, assistant division engineer, eastern division, Carter Oil Co., Mattoon, Ill.

"Present Status of Southeastern Illinois Oil Fields," Millard Flood, petroleum engineer, Ohio Oil Co., Robinson, Ill.

International Petroleum Exposition Officers Reelected

The board of directors of the International Petroleum Exposition meeting in Tulsa Tuesday reelected officers as follows: W. G. Skelly, president; Alf G. Heggem, vice president; Frank J. Hinderliter, vice president; Clyde H. Pape, treasurer; H. R. Powers, secretary; W. B. Way, general manager, and Frank O. Prior and W. M. Bovaird, members of the executive committee.

President Skelly reported inquiries received on the May 18 to 25, 1940, exposition indicate the largest show in the history of the oil capital.

Jobber Sues Oil Companies

MINNEAPOLIS, Minn., May 23. — Nine major oil companies were sued for $250,000 damages by a Wisconsin gasoline jobber in federal court today for allegedly entering into a conspiracy to fix prices.

C. A. Abraham, owner of the Wolf River Oil Co., of Fremont, Wis., brought the suit against the Shell Petroleum Corp., Standard Oil Co. of Indiana, Pure Oil Co., Sinclair Refining Co., Phillips Petroleum Co., Socony-Vacuum Oil Co., Skelly Oil Co., Continental Oil Co., and Cities Service Oil Co.

Seminole Oil Party

The city of Seminole, Okla., was host to several hundred oil men and their wives at the annual Oil Men's Show and Banquet May 17.

THE MARKETS*

CRUDE OIL: *General crude market steady, with exception of Illinois, where steady increase in output without additional pipe-line outlets has resulted in distress crude sales. Considerable spot crude offered under posted prices in that area.*

REFINERY: *Approach of peak gasoline demand of year and reduced stocks have improved spot markets in several refining areas. Distillates soft. Steady demand for heavy fuel oils at firm prices.*

TANK-WAGON AND POSTED DEALER: *Standard of Indiana advanced gasoline and kerosene prices to normal in Illinois and Indiana.*

FINANCIAL: *Low first-quarter earnings have bearish reaction in oil-security market. Average of 30 representative stocks for week ending May 20: High, 25.10; low, 24.18; close, 24.66. Week ending May 13: High, 25.28; low, 24.50; close, 24.89.*

**Detailed information in market section.*

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CEMENTING such a deep oil well looked tough... so they chose Unaflo Oil Well Cement! They mixed 430 bags into a 15-lb. slurry. No ice was used. Then, despite a 218° temperature 800 ft. above the casing shoe, they pumped this slurry down 12,165 ft., and back of the casing.

One hour and 20 minutes from the start the plug was landed. They used a single slush pump with a maximum pressure of 1250 lb. per sq. in.—a pressure only slightly greater than that produced by the unbalanced column! Despite the high temperature and great depth, everything went along smoothly. And cement drilled later was hard... Results like these prove that it pays to play safe with your well investment—with Unaflo. Use it on your next job! Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Amicable Building, Waco, Texas; Kansas City; Tulsa; Oklahoma City.

12 GOOD REASONS FOR USING UNAFLO!

1. Gives you more time to get it down.
2. Mixes and places easily with 35 per cent water, thus eliminating need for excess water, a big menace to good cementing.
3. Follows irregularities of well bore and casing.
4. Regulates viscosity at tub to build pressure, penetrate formations, and displace contaminants.
5. Hardens thoroughly with high density after it is placed.
6. Not stiffened by mud contamination.
7. Not affected by salt water contamination.
8. Sets satisfactorily in sulphate water.
9. Meets the requirements for sulphate resistance.
10. Makes squeeze and plug-back jobs easier, surer, more successful.
11. Permits operator to control cement rather than being controlled by it.
12. Has been proved by oil industry by consistently "coming through in the clinches" ever since its introduction.

OG-U-4

Universal Atlas
CEMENTS

Predict 5 Per Cent Gain in June Gasoline Demand

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the market demand in June 1939 is 3,491,000 bbl. This is 65,800 bbl. (2 per cent) more than the estimate for May and 4 per cent more than the actual demand in June 1938. The estimated runs to stills of 3,317,700 bbl. daily is 188,400 bbl. higher than the actual daily average for June 1938, but the estimate for crude oil exports is materially less.

Daily average crude oil production and runs to stills during the four weeks April 1 to April 29 were 3,526,000 bbl. and 3,280,000 bbl., respectively. During this period total crude oil stocks increased 1,617,000 bbl., 361,000 bbl. of which was in foreign stocks, leaving an increase of 1,256,000 bbl. in domestic crude oils, or 45,000 bbl. daily. This figure subtracted from the production leaves 3,481,000 bbl. as the apparent daily demand for domestic crude during April, compared with the bureau's estimate of 3,434,000 bbl.

ESTIMATED DAILY AVERAGE CRUDE-OIL DEMAND BY STATES (BARRELS)

(As no changes in crude-oil stocks are involved in these estimates, they represent demand rather than production)

State—	Forecast June 1939	Forecast May 1939	Actual demand June 1938
Texas	1,427,300	1,406,100	1,340,000
California	594,600	582,600	619,000
Oklahoma	450,300	455,800	553,000
Louisiana	265,000	261,600	234,000
Illinois	174,300	159,700	52,000
Kansas	152,400	152,600	152,000
New Mexico	117,000	115,500	106,000
Wyoming	73,300	64,200	69,000
Arkansas	54,700	52,900	54,000
Michigan	53,400	50,000	53,000
Pennsylvania	50,200	48,300	47,000
Montana	17,300	16,100	16,000
Kentucky	17,000	15,800	16,000
New York	14,900	15,100	14,000
Ohio	10,900	10,500	6,000
West Virginia	10,700	10,300	7,000
Colorado	5,000	5,200	4,000
Indiana	2,700	2,900	3,000
Total	3,491,000	3,425,200	3,345,000

Motor Fuel

Domestic demand.—The estimated domestic demand for motor fuel is 50,600,000 bbl., or 5 per cent more than the actual, for June 1938.

Exports.—Motor fuel exports have been estimated as 4,300,000 bbl., about the same as the actual exports in June 1938.

Stocks.—Stocks of finished and unfinished gasoline on March 31 were 87,121,000 bbl. According to statistics of the American Petroleum Institute, they declined only about 500,000 bbl. during April, which would bring them to approximately 86,600,000 bbl. as of April 30. The bureau estimates a decrease of 6,400,000 bbl. in June.

Gasoline production.—Benzol and direct sales of natural gasoline have been estimated as 1,100,000 bbl., making refinery production 47,400,000 bbl. This is distributed among the various districts as follows (thousands of barrels): East Coast, 6,230; Appalachian, 1,700; Indiana-Illinois, 8,720; Oklahoma, 2,600; Kansas-Missouri 2,330; Texas Inland, 3,390; Texas Gulf Coast, 12,450; Louisiana Gulf Coast, 1,420; North Louisiana-Arkansas, 940; Rocky Mountain, 1,260; California, 6,360.

Crude Petroleum

Runs to stills.—Natural gasoline to be blended at the refineries in June is estimated as 6.1 per cent of the total gasoline production, or 2,890,000 bbl. The yield of straightrun and cracked gasoline is estimated as 44.7 per cent. The application of this yield to the production of 44,510,000 bbl. gives crude runs of 99,530,000 bbl., or 3,317,700 bbl. daily. Foreign crude runs are estimated as 2,400,000 bbl.

Exports, fuel, and losses.—Exports of crude oil are estimated as 5,900,000 bbl., or 1,524,000 bbl. less than they were in June 1938. The estimate for fuel and losses is 1,700,000 bbl.

Total demand.—The total demand for domestic crude oil in June 1939, as indicated by the estimates above, is 104,730,000 bbl., or 3,491,000 bbl. daily.

Crude oil demand by states.—The breakdown of the total estimated daily demand for domestic crude oil of 3,491,000 bbl. gives the following crude requirements by states of origin. As these requirements may be supplied either from stocks or from new production, contemplated withdrawals from crude oil stocks must be deducted from the bureau's estimate of demand to determine the amount of new crude required. These estimates are not recommendations for production but represent the projection of actual market trends by states.

SINCLAIR

(Continued from Page 25)

retail prices on other refinery products including kerosene, gas oil, distillate, fuel oil, and lubricating oils. Furnace oils east of the West Coast are now ½ to 1½ cents per gallon under the 1937 highs in both tankcar and tank-wagon deliveries. Bunker C fuel oil, which advanced to a high of $1.35 per barrel along the Atlantic seaboard in 1937, is now 95 cents. Similar price reductions were made effective at Gulf Coast shipping points. At interior refining centers, fuel oil quotations are off from 20 to 40 cents per barrel from the 1937 levels. Lubricating oil quotations have declined from 25 to as high as 50 per cent on certain oils and stocks.

Obviously these sizable reductions in the prices received for finished products have a direct bearing on the gross revenue and net earnings of the industry. A decline of 1 cent a gallon in domestic and export gasoline prices means a reduction of $240,000,000 yearly in gross revenue of the industry in this country. A 20-cent per barrel drop in fuel oil, distillate and gas oil quotations will result in a loss in gross return of $100,000,000. While the demand for distillates suitable for furnace oils and Diesel fuels is increasing, comparative data indicate that the gross yearly revenue from these sales in the eastern part of the United States has decreased $25,000,000.

These decreases in gross revenue brought about by lower prices obviously cannot help but have an effect on net earnings of the industry as a whole. The effect on the individual companies will depend on their operating position in the industry. The jobber or dealer who operates on a guaranteed margin regardless of the prices he receives for the products he sells will not be affected by price declines. The crude producer is not directly concerned with refinery and retail price declines until such time as they are reflected in the prices the refiner is willing to pay for the crude.

The company whose operations are completely integrated is the one whose gross and net are immediately affected when markets for the finished products refined at his plants and distributed through his marketing facilities start to decline. That is the present situation of companies whose combined operations represent at least 75 per cent of the industry's operations.

This situation is readily shown in the 1938 reports of 32 major and semimajor companies. A detailed summary of the 1938 financial statements of 32 companies prepared by F. J. Sansone, Carl H. Pforzheimer & Co., will be published in June 1, 1939, issue of The Oil and Gas Journal. The net earnings of these 32 companies dropped from $624,725,835 in 1937 to $337,608,469 in 1938, a decrease of $287,144,366, or 46 per cent. The gross earnings of these companies decreased $385,570,255. This decline was largely due to the lower prices received for petroleum products. Unfortunately it is impossible for the operating companies to contract their costs in line with the reduced revenue. In this case 75 per cent of the reduction in gross revenue was carried over to a loss in net revenue. The danger to the crude market lies in the fact that unless the product price situation improves, crude buyers may feel compelled to protect themselves and reduce posted schedules in line with the refinery revenue.

SHAWNEE

(Continued from Page 23)

North Earlsboro pool, was dry and abandoned in Wilcox sand at 4,802-10 ft., the past week. It was unofficially reported at Shawnee that another test in that general area would be announced soon.

In the far southeastern corner of the county, near the Seminole and Pontotoc county lines, Farmers Mutual Royalty Syndicate, Inc., was reported preparing to complete a well estimated good for 500 bbl. of oil daily. It was in the SE NE NW Section 9-5-5, southwest of Konawa. It topped Viola lime at 2,627 ft., 106 ft. higher than a north offset, and was bottomed at 2,864 ft. in Simpson dolomite. Pump and tanks have been installed and the operators were due to put the well on production. Two wells have been drilled in the area, and locations have been staked for three more, all to be Simpson tests. Harry Culver and Bert Shepherd, of the Farmers Mutual company, recently sold an interest in their leases in the area to Mineral Producers, Inc., of Peoria, Ill.

Culver, Shepherd and others have started work at No. 1 Burton & Swan, SW NW SE Section 3-5-5, across the line in southwestern Seminole County. It is to be a Wilcox sand test. The operators have leases on approximately 2,000 acres in the district, and have announced plans to develop their properties in that area this year.

With the several wildcats, the new work at Shawnee, and activity in the St. Louis and Avoca districts, Pottawatomie is by far the busiest county in Oklahoma. There were 7 rigs and 46 drilling wells in the county on May 1, and that number has been increased somewhat since then.

Obituaries

OTTO L. DOYLE, 51, of Oklahoma City, died in a hospital in Tulsa on Saturday May 20, and was buried in Oklahoma City. Mr. Doyle retired from the service of the Carter Oil Co. in 1937 on account of ill health. He was employed in the accounting department and later with the crude oil marketing department.

CHARLES FRANCIS DE GANAHL, organizer and president of Tal Vez Oil Co. and Mexico and South Oil & Transport Corp. of Delaware, in Mexico, died in New York recently. He established Powers Petroleum Co. and Tankers, Ltd., abroad.

R. B. BRYANT, 52, oil man of Dallas and Kerrville, Tex., died at Austin, May 21. He was reared in Nashville, Ark., entered the oil business in the East Texas field in 1931. Later he extended his activities into the Corpus Christi, Aransas and K.M.A. fields.

FRANK HOVELL, 56, assistant superintendent of the H. H. Cross refinery at Smackover, Ark., died May 19 of burns suffered several weeks previously at the plant.

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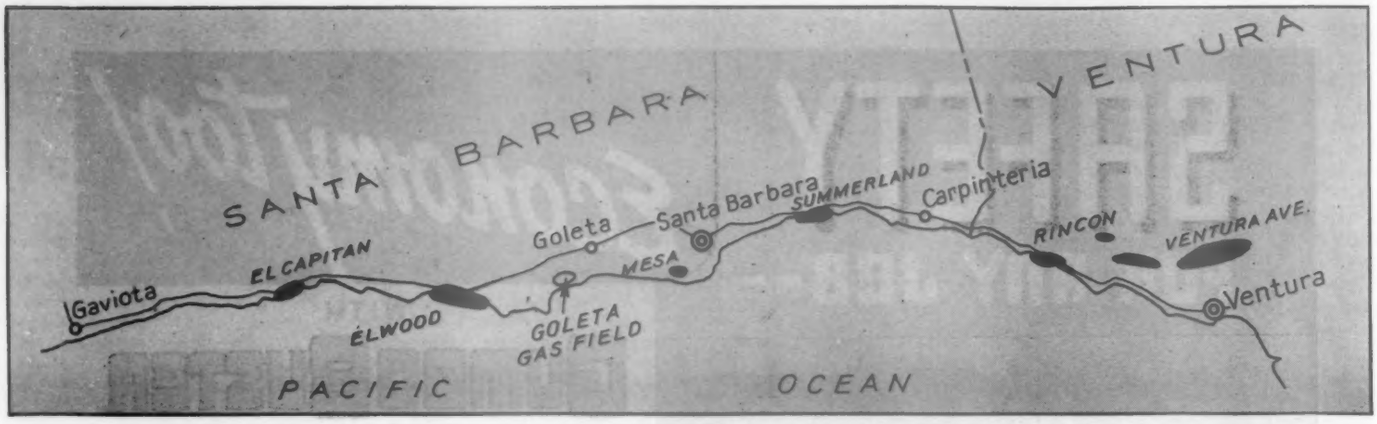


Location of Goleta gas field, Santa Barbara County, California

California Is Busily Searching for Natural Gas Reserves

By L. P. STOCKMAN

Practically all centers of population and largest consumption in California have been using natural gas exclusively for domestic purposes and in the manufacture of commodities for several years. Only on a few occasions, due to line breaks or other causes outside the sphere of normal operations, has artificial gas been used to supply California consumers. At certain times during abnormal peak consumption, resulting from an unexpected cold spell of several days, certain manufacturing establishments have been taken off the line to permit maximum deliveries to domestic consumers.

Thus, in the production and distribution of natural gas in California, we have two priorities. In the production end natural gas produced with crude oil is given priority over gas from dry gas fields as a conservation measure to prevent waste and in the distribution end domestic consumers have priority over commercial users. It has not been necessary in recent years to take commercial users off the gas line as all of the public utilities have augmented their transmission lines and made additional connections with sources of supply.

To bring California natural gas to the centers of consumption several hundred miles of main trunk lines have been laid, both northward to the San Francisco Bay region and southward to Los Angeles and San Diego. Two main trunks extend northward from the center of the San Joaquin Basin and a like number southward. The principal source of natural gas in California has been gas produced with crude oil. Prior to the discovery of the Kettleman North Dome field late in 1928, the natural gas market in California was limited primarily to the southern California area. Gas for this market was supplied from Los Angeles Basin fields, Ventura Avenue, Buena Vista Hills section of the Midway-Sunset and Elk Hills in the San Joaquin Valley. In the latter case a large portion of the gas was taken from a dry gas horizon found above the oil measures. Development of Kettleman Hills with wells producing from 75,000,000 to 150,000,000 cu. ft. of gas per day with a small amount of light-gravity crude oil from the gas cap caused expansion of the natural gas market and led to the introduction of natural gas into the San Francisco Bay region and other northern California areas. Two 22-inch lines and one 10-inch gas pipe lines were built into Kettleman North Dome field by Standard Oil Co. and Pacific Gas & Electric Co. to supply this northern California market and one 20-inch and one 26-inch line was laid into southern California by Southern California Gas Co. from this and other adjacent fields.

With the decline of flush production in Los Angeles Basin fields and the very substantial drop in gas production, Kettleman North Dome field became the largest source of supply until it reached a point where it was supplying more than 50 per cent of the total market. Since the peak of development in the North dome other prolific fields have become liberal suppliers of the gas needed. This condition brought about the unique situation in California of aggressive exploration to discover new sources of natural gas and led to discovery of a number of primary sources of supply and several of lesser magnitude. The exploration was concentrated for the most part in the San Joaquin Basin and was carried on by geophysical methods, principally reflection seismograph surveys. Subsequently, prospectors moved northward to Solano County, San Joaquin County and the adjacent area and were rewarded by the finding of several new gas

Standard Oil Co. No. 1 Weyl Zuckerman in McDonald Island gas field, San Joaquin County, California

fields. All gas companies as well as electrical companies in California are classified as public utilities and are under supervision of the California Railroad Commission, which establishes the rate of service to the public and exercises other supervisory powers. Permits must be obtained for all major trunks, and careful attention is paid to the probable time of use and approximate amount of natural gas available to determine whether the installation is justified.

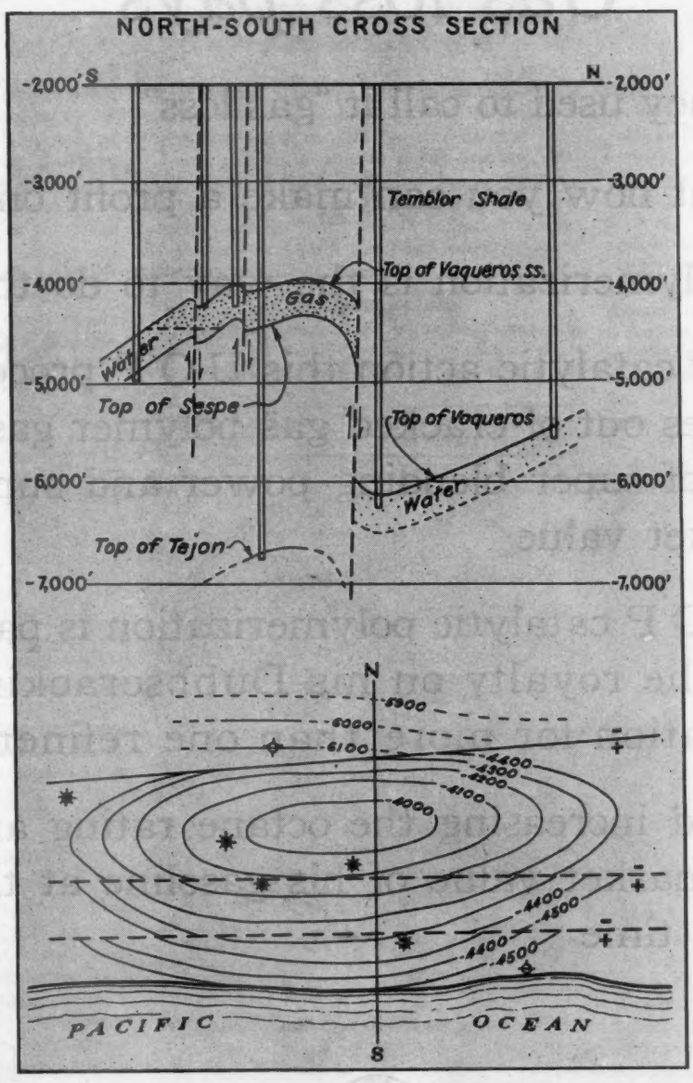
The inquiry and reports submitted to the Railroad Commission at the time of the construction of the first major trunk line of Pacific Gas & Electric from the Buttonwillow gas field to San Francisco in the light of subsequent developments are very interesting. The main trunk was subsequently routed via Kettleman North dome and was authorized on the basis of the premise that Kettleman Hills had sufficient natural gas to supply the entire San Francisco Bay region for 40 years. This is, of course, untenable in the light of what has happened to Kettleman Hills due to gas waste and uneconomic production activities by a few companies operating outside of the two unit plans. Discovery subsequently of other commercial gas fields, Buena Vista Lake, Delano and Semi-Tropic, augmented by production from the Buttonwillow gas field, will permit the amortization of the major trunks laid on the erroneous presumption that the gas supply of Kettleman Hills was almost limitless.

McDonald Island Gas Field

The McDonald Island gas field, on McDonald and Roberts islands, 10 miles northwest of Stockton in San Joaquin County, was discovered by Standard Oil Co. as a result of reflection seismograph survey. Reconnaissance work in the fall of 1935 indicated an anticline, and detailed work revealed a closed dome. The area is rather difficult to work on a reflection seismograph.

No. 1 McDonald Island Farms, in Section 25-2-4, was spudded in March 11, 1936, and completed July 2, 1936. With 9-inch casing at 5,153 feet, the well was completed in the McDonald Island sand for 26,600,000 cu. ft. of dry gas through a three-fourths inch orifice from 5,227 feet. The gas was chiefly methane. Shut-in pressures were 2,100 pounds. Since completion of the discovery well five other producers and one dry hole have been drilled. An 8-inch natural-gas line from the field-gathering system delivers the gas to the main trunk of the Standard Pacific gas line which extends from Kettleman Hills to the San Francisco Bay region. The distance from McDonald Island to Byron, where the Stanpac line was met, is nearly 23 miles, and in that stretch the connecting line was laid across the beds of three rivers, the San Joaquin, Middle and Old. The six completed wells in the McDonald Island gas field are capable of delivering more than 30,000,000 cu. ft. of gas daily. A composite sample of gas from the McDonald Island gas line showed a heat value of 965 B.t.u. It is estimated there are approximately 2,000 productive acres.

The surface of McDonald Island is a perfectly flat plane at sea-level elevation. Like other islands of the San Joaquin-Sacramento delta area, it is protected by large levees which exclude river and tidewaters. The soil covering the island contains considerable peat and plant remains in various stages of decomposition, particularly in the top 5 to 10 feet. No clue to subsurface structure is offered by the soil, topography or drainage pattern. The peaty soil is a handicap to seismograph work. The stratigraphy of McDonald Island is best known from cores of the first well. Loose dark-gray sands and green and yellow clays encountered in No. 1 McDonald Island Farms above 1,450 feet are considered Pleistocene and Pliocene in age. The lower portion may be equivalent to the Tehama.



Goleta gas field, contours on top of Vaqueros sandstone

Between depth of 1,470 and 2,772 feet are some 1,300 feet of sediments, which are tentatively placed as equivalent to the Mehrten formation. Cores in this interval include a considerable amount of crossbedded sandstone with blue-coated grains. The coating on these grains is of blue opal. Pebbly sandstones, fine siltstones and green and variegated clays are also present in the same interval. The Mehrten formation has been described by H. S. Gale, A. M. Piper and H. E. Thomas in an unpublished manuscript of a report for the U. S. Geological Survey. They named it after exposures along the Mokelumne River near the Mehrten damsite, about 3½ miles upstream from Clements Bridge in the SW quarter Section 6-4n-9e. They described the Mehrten as a fluviatile sandstone, siltstone and conglomerate of dominantly andesitic detritus, overlying and truncating the pumice, ash, tuff, clay and conglomerate of the Miocene Valley Springs formation. They regarded the Mehrten as questionably Miocene. It seems at least as likely it is lower Pliocene. Fresh-water sediments in No. 1 McDonald Island Farms between 2,797 feet and 3,555 feet are believed to be of Miocene age. They are possibly roughly equivalent to the Zilch. The zone is predominantly clay, but includes sands and conglomerates, with ash beds below 2,797 feet and bentonite beds below 3,407 feet. The brackish-water Miocene zone between 3,570 feet and 3,846 feet includes chiefly variegated sands (blue, black and brown) with worm borings, lignitic material and pyritized plant remains. Marine fossiliferous fine sands between 3,866 feet and 3,968 feet are Miocene in age.

Typical deep water upper Eocene Markley shale is present between 3,968 feet and 4,208 feet. The Markley here is a brown to gray compact hard shale. Bentonitic and carbonaceous materials and glauconite are intermittently present. Radiolaria and fish scales are common. Macra fossils are sparse, but foraminifera are present in great diversity and abundance. Between 4,208 feet and the uncored intervals, 4,218 feet to 4,224 feet, are 10 to 16 feet of fine glauconitic sandstones and siltstone. This zone is characterized by the presence of Pecten interradiatus. It is basal Markley in age. The sediments between 4,224 feet and 4,973 feet are Domengine. A good Domengine marine microfauna is present at 4,258 feet and intermittently at greater depths. The upper 200 feet of the Domengine consists of interbedded siltstones, fine sands, and thin shales with carbonaceous material, pyritized plant remains and occasional groups of glauconite grains. The portions below 4,408 feet are predominantly medium to coarse quartzose gray sand with some interbedded brown shale. White sandy bentonite is present at the base. The megafauna and microfauna are both characteristic and abundant.

The Capay shale is present in No. 1 McDonald Island Farms between 4,973 feet and 5,178 feet. It is a brown to gray shale with phosphatic nodules, pyritized plant remains and some glauconite. The base is marked by a glauconitic sandy conglomerate. Small gastropod and pelecypod fragments are common as well as a characteristic assemblage of foraminifera. In No. 1 McDonald Island Farms the Capay rests directly on the McDonald Island sand. However, in No. 2 McDonald Island Farms, 130 feet of Martinez shale intervenes between the Capay shale and the McDonald Island sand. This Martinez shale is a grayish-brown shale with phosphatic nodules, worm borings, scattered glauconite grains and sparse Martinez forams. The McDonald Island sand is a fine to medium friable gray sand, and it is the producing gas sand of the structure, with interbedded siltstones and brownish-gray shales and occasional streaks of carbonaceous material. A total of 254 feet of this sand was penetrated in No. 2 McDonald Island Farms. This well is the only dry hole drilled on the structure. A

(Continued on Page 114)

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Taxes Take 23 Cents of Dollar Consumer Pays to Company

By EDWARD G. SEUBERT
President, Standard Oil Co. (Indiana)*

The directors of a company like ours have a difficult job of balancing to do, as they attempt to assure a square deal to all groups affected by operations. Customers must, of course, constantly receive the best of consideration and attention because they are the main source of income and always ready to bestow their patronage elsewhere if they are not satisfied. Among our customers we may also properly count the 36,851 dealers who buy our products for resale.

Governments are playing an ever larger role as beneficiaries of the operation of our business. Taxes must be paid. We must strive constantly also to make some profit so we can pay our stockholders fair compensation for the use of their properties and equipment.

But not the least of the concerns of our management is the task of keeping employes securely at work, adequately paid and contented. To make the business as fruitful for you as is possible is desirable for the interest of all other groups concerned.

1938 a Recession Year

Conditions in the oil industry were generally far from satisfactory in 1938. Consequently the sales of Standard of Indiana and subsidiaries declined in value from a total of $358,227,298 to $327,910,574, or by $30,316,724. The decline might have been even greater if our sales department had not in many instances met prevailing prices to hold business. In volume of crude and products the decrease was from 118,114,315 bbl. (42 gal.) to 110,404,268 bbl.

Employment and Annuities

In our whole organization at the end of 1938 there was a total of 29,928 employes, or 2,053 fewer than a year earlier. Most of that decrease was due to elimination of workers whose status had been temporary. Only to a slight extent, considering all conditions, were regular operations curtailed so as to decrease regular employment.

Salary and wage payments for 1938 totaled $66,418,784. The average wage earned by employes was much higher than the average for industrial workers generally and higher even than the average for the oil industry in general.

I am glad to report that 1938 saw final development of the new annuity plan. As of March 31, 1939, a total of 22,308 employes had signified their intention to participate. A total of 154 employes were graduated to the annuities' roll in 1938, bringing the net total of annuitants to 851. Total payments for pensions in the course of the year were $975,360. In addition the companies paid $3,088,170 to federal and state governments for old age pensions and unemployment insurance funds under the Social Security Act, of which $586,869 represented deductions from employes' pay as required by law.

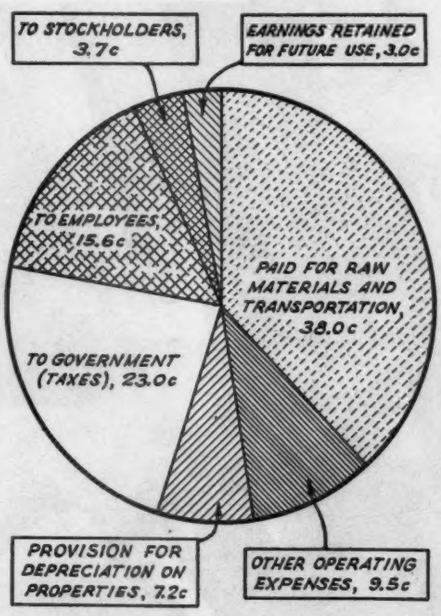
Long Service Recognized

Service pins were awarded in 1938 to 7 Standard of Indiana employes who reached the fortieth year of service, 47 who reached the thirtieth, 527 for the twentieth and 735 for their tenth.

I was glad to be able to report that the relations between management and employes have continued on the basis of mutual confidence and friendly understanding. We all benefit from ability to work in relative peace in a world which is currently so full of turmoil.

Operations Results

Conditions necessitated that those in the producing branch should operate on a somewhat restricted basis in 1938, as was the case throughout the production branch of the whole industry. You completed 581 wells, of which 497 produced oil, 20 proved to be gas wells and 64 were dry holes. You produced 30,382,995 bbl. of oil, the daily average during December being 81,530 bbl. net, or 100,266 gross (owned and controlled). At the end of the year the company owned 4,091 oil wells and 73 gas wells, or a total of 4,164, and had estimated reserves of wholly owned recoverable oil under proven and producing acreage, exclusive of reserves under acreage considered proven but not now producing, in excess of 542,000,000 bbl.


TO STOCKHOLDERS, 3.7c
EARNINGS RETAINED FOR FUTURE USE, 3.0c
TO EMPLOYEES, 15.6c
PAID FOR RAW MATERIALS AND TRANSPORTATION, 38.0c
TO GOVERNMENT (TAXES), 23.0c
PROVISION FOR DEPRECIATION ON PROPERTIES, 7.2c
OTHER OPERATING EXPENSES, 9.5c

Division of consumer dollar as paid to Standard of Indiana

Those who work on the pipe lines moved 94,334,383 bbl. of crude as compared with 89,608,942 bbl.; those operating tank vessels carried 19,184,213 bbl., inclusive of amounts handled by contract ships. In our 12 refineries employes ran a total of 87,756,076 bbl. of crude against 87,207,189 bbl. in 1937.

Our decrease of 7,710,047 bbl. in sales occurred largely in fuel oils and crude oils, which are not the sales most vital to our earnings.

All employes, whether in the sales department or not, can play some part in sales. First of all, their own purchases are in the aggregate a considerable amount of business for any company. Secondly, employes can do a great deal to enlarge sales by urging their relatives and friends to buy.

In view of recent public interest in catalytic cracking, which is a relatively new method of increasing the yield of desired products from crude, it may be of interest to know that our research workers are fully alive to the importance of this development. The possibilities of catalytic cracking and catalytic reforming in the process of making gasoline have long been considered. Some catalytic processes other than those used in cracking are already in use. The company is in position to adopt catalytic cracking on a favorable basis if it becomes evidently economical.

Financial Affairs

As to financial results and condition, the amounts collected and their disposition were as follows:

From customers, for products, etc.	$335,996,017
From customers, excise taxes	82,824,345
Dividends, royalties, etc., received	4,815,854
Total to account for	$423,636,216
Paid for raw materials and transportation	$161,107,332
Other operating expenses	39,767,956
Provision for depreciation, etc., on properties that cost $714,798,958	30,388,962
Interest charges	321,598
Excise taxes collected and accounted for to state and local governments	82,824,345
All other taxes	14,660,860
Wages and salaries of employes	66,418,784
Dividends paid to stockholders	15,429,090
Retained in the business to provide for future needs	12,717,280
Total	$423,636,216

The same accounting appears in a chart showing division of the customer's dollar. Employes received 15.6 cents out of every dollar, governments 23 cents and stockholders 3.7 cents in 1938. Stockholders profited in addition by any enhancement of the value of their stock through addition to surplus of that part of the earnings retained for future needs. Employes also received benefits indirectly from this addition because any move which makes the company's financial resources strong for the future helps to assure its weathering temporary storms with minimum effect on employment conditions.

What the Business Is Worth

The relation of current assets to current liabilities is favorable. Properties with which we work have been well maintained. The net investment in properties increased in the amount of $22,678,244. This increase is the net of expenditures of $37,500,000 for properties, less deductions because of retirements, abandonments and replacements of outmoded or used up properties. The consolidated total assets of the company as of December 31 were $724,663,142, or about $24,000 for every employe at work.

(Continued on Page 114)

*From report to employes of company.

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Production in Iran Less During First Two Months 1939

Crude oil production from Iran during the first two months of this year aggregated 1,486,000 tons, being divided 836,000 tons for January and 650,000 tons in February. During the first two months of 1938, Iran produced 1,604,000 tons of oil. The production of 836,000 tons in January compares with yield of 862,370 tons in December 1938. Iran crude averages 7.51 bbl. per ton indicating that production during the first two months of this year amounted to approximately 11,159,860 bbl. compared to 12,046,040 bbl. for the same period in 1938.

First Deliveries from Dammam Area Through Pipe Line

First crude oil deliveries through California Arabian Standard Oil Co. new 40-mile, 10-in. pipe line from the Dammam field in Saudi Arabia to the new shipping terminal at Ras Tanura on the Persian Gulf were made early this month and during the last few days of April. Ibn Saud, king of Saudi Arabia, the crown prince, Emir Saud, and other government officials attended the ceremonies at which the new oil and commercial port was dedicated.

The new Dammam field was discovered in 1937 but it was not until the middle of 1938 that it assumed outstanding commercial importance when a new and deeper oil horizon at 4,700 ft. was discovered. Wells in the shallow discovery pay at 2,500 ft. declined rapidly from their flush performance and did not justify the expenditures necessary to bring the field into commercial exploitation. The sand at 4,700 ft. was discovered in one of the old wells carried deeper. Since that time most of the 10 tests on the Dammam structure have been deepened to the lower horizon which has proved to have substantial extent and productivity. Limits of the structure have not been defined although with the new pipe line completed the drilling program is to be extended.

A. S. Russell, a director of Standard Oil Co. of California, represented his company which is the parent of California Arabian Standard Oil Co., at the dedicatory ceremonies.

Shell of Ecuador Begins Exploratory Work on Concession

Preliminary exploratory work has been started by Shell Oil Co. of Ecuador, Ltd., on its extensive concession in Ecuador which covers approximately 20,000,000 acres in an area extending from the Andes on the west to the boundaries of Peru and Colombia. Shell Oil Co. of Ecuador, Ltd., was registered last month to take over the concession granted in 1937 to Anglo-Saxon Petroleum Co., Ltd.

Egypt Increases Minimum Limits Under Permit Law

Egypt has modified previous limits on the number of exploration permits available under its mining laws raising the maximum from 40 to 240, each of 100 square kilometers. Under the previous limit of 40 permits totaling 4,000 square kilometers, or about 988,000 acres, the five international oil companies interested in Egyptian petroleum exploration enlisted as many subsidiary companies as necessary to cover the areas they wished to examine. The urge to examine as much territory as possible resulted in almost weekly change in the status of permits. It developed that some permits were dropped with only superficial examination for the sake of making claim to new territory before competing interests filed on the permits still available.

The Egyptian mining authorities are reported to have raised the limits on the number of permits any one company can hold at a given time to encourage more careful geological and geophysical examination and to decrease the volume of clerical and drafting requirements in the government agency.

Anglo-Egyptian Oilfields, Ltd., is the first company to receive more elastic treatment regarding the number of permits. Part of the consideration for the greater number of permits was an obligation assumed by the company for the drilling of an artesian well in the western desert between Alexandria and Solloum at its own expense.

The new Ras Gharib field is the only new oil production discovered since the Egyptian mining laws were modified in 1937 but more extensive drilling is definitely on the program of most interested companies. The drilling stage of Egyptian exploration is just now assuming pattern after the first intensive campaign for desirable permits.

Applications have been granted or are under consideration covering approximately 900 permits, or 90,000 square kilometers, a total of about 2,223,000 acres. Practically all of the permits granted and on application are in the northern part of the country extending from Solloum to the Palestine boundary and along the Suez Canal waterway.

The six companies active in Egyptian exploration are Anglo-Iranian Oil Co., Ltd.; Royal Dutch-Shell; Socony-Vacuum Oil Co., Inc.; Standard Oil Co. of New Jersey, and the Standard Oil Co. of California-Texas Co. group.

Egyptian mining laws provide for three stages in the matter of holding acreage. Exploration permits may be converted into prospecting licenses and they in turn into mining leases. The exploration permits provide for geological and geophysical examination and for core drilling. The prospecting licenses cover actual exploration by drilling operations and the mining leases convey the right of production for a period of 30 years.

Venezuela Reaches Highest Production Since Late in 1937

The highest rate of production attained since the latter part of 1937 was registered last month in Venezuela. Daily average production increased to 558,954 bbl. in April, a gain of 61,501 bbl. over the daily average output of 497,453 bbl. registered during March 1939. In April 1938, Venezuela produced an average of 452,450 bbl. daily, making last month's rate of output higher by 106,504 bbl. Total output of Venezuela during the past month estimated at 16,768,633 bbl. exceeded recovery for March by 1,347,618 bbl. and was 3,195,128 bbl. greater than yield for April 1938. The daily average production of 558,954 bbl. recorded in April has been exceeded only two or three times in the history of Venezuela. Not since October 1937, when the average yield was slightly higher than 560,000 bbl. daily, has the rate of recovery registered last month been exceeded.

Although a comparison with 1938 is not possible because of a new system of reporting production in a lump sum for Lake Maracaibo fields by Lago Petroleum Corp. and Creole, a big part of the April increase over March came from this area. March production for Lagunillas which also included all Lago and Creole output in the Lake Maracaibo fields aggregated 7,874,351 bbl. There was an increase of nearly 200,000 bbl. in Tia Juana output, exclusive of Lago properties and some of the smaller fields registered gains. Bachaquero, Tarra, El Mene and Cumarebo were the small fields which reported substantial production gains while declines were suffered by Quiriquire, La Rosa, Mene Grande, Temblador, and Pedernales.

Production details are shown in the following tables:

VENEZUELA PETROLEUM PRODUCTION
(In barrels)

By Fields

	Apr. 1939	Apr. 1938	Dly. average Apr. 1939
Lagunillas	*9,126,141	4,989,813	304,205
Tia Juana	2,147,518	2,160,968	71,584
Quiriquire	2,131,582	2,002,461	71,053
La Rosa	934,775	2,594,032	31,159
Mene Grande	886,631	706,015	29,554
Tarra	467,122	372,300	15,571
Bachaquero	315,129	.....	10,504
Cumarebo	248,625	211,550	8,287
Temblador	163,679	169,891	5,456
Pedernales	154,227	156,898	5,141
Concepcion	67,587	77,112	2,253
El Mene	72,990	62,496	2,433
La Paz	52,627	69,969	1,754
Total	16,768,633	13,573,505	558,954
Total March 1939	15,421,015		
Daily average March 1939	497,453		
Daily average April 1938		452,450	
Total April 1938	13,573,505		

By Companies

Lago Petroleum Corp.	5,370,119	3,729,324	179,004
Venezuela Oil Con.	5,203,690	4,006,291	173,456
Standard of Venezuela	2,803,206	2,712,192	93,440
Mene Grande Oil Co.	1,882,000	1,932,000	62,733
Caribbean Petroleum Co.	886,631	706,015	29,554
Colon Development Co.	467,122	372,300	15,571
British Controlled	72,990	62,496	2,433
North Venezuela Petroleum Co.	82,875	52,887	2,763
Total	16,768,633	13,573,505	558,954

*This figure includes all Lago and Creole production in the Lake Maracaibo fields.

Refinery Expansion

Construction Advancing At Glacier Plant

Work is far advanced on a refinery being built by Glacier Production Co. (Montana Power Co.) at Cut Bank, Mont. It is expected to be in operation by June 15. It consists of combination skimming and two-coil selective Dubbs cracking units, with Universal Oil Products catalytic polymerization unit to make polymer gasoline from the cracked gas. The units will have rated crude capacity of 3,300 bbl. a day, and daily cracking capacity of 2,125 bbl. The poly unit is designed to process 460,000 cu. ft. of gas a day. The refinery is the result of an agreement among Glacier, Socony-Vacuum Oil Co., Inc., and a group of independents. It will run on Cut Bank crude, part of which will come from Glacier and part from the other producers. Glacier has headquarters at Butte, Mont.

Expenditure of $1,783,000 Announced for Imperial

CALGARY, Alta.—C. M. Moore, superintendent of the Imperial Oil Refineries, Ltd., plant at Ogden, East Calgary, has announced the beginning of construction operations on a modern unit to cost $1,783,000 and be ready for operation by the end of 1939. Tentative plans over a year ago contemplated expenditure of $500,000 but the plant now under construction will be much more extensive. It is designed to handle a wide variety of gravities obtainable in Alberta with a highly flexible type of equipment and the general plan will allow for incorporation of new developments in cracking that are now being studied.

New buildings of fireproof brick construction will include a 55 by 37 pump room; 44 by 66 pump control room; 87 by 73 hot pump room, and 20 by 18 motor control room; all rooms being 14 ft. high.

The new installation will make the Calgary plant Imperial's largest in Canada outside Sarnia, with a daily capacity of around 7,000 bbl.

Lion Oil Not Expected to Exercise Option on Atlas

When the directors of the Lion Oil Refining Co. meet late this week they are expected to announce they will not take over certain properties of the Atlas Oil Corp. under an option the latter gave to Lion several months ago.

These properties include a 12,000-bbl. refinery at Shreveport equipped with a 6,000-bbl. cracking unit and a pipe line serving this plant with East Texas crude.

Operation Starts at New British American Plant

CALGARY, Alta.—In tentative operation for several weeks, the recently completed refining plant of British American Oil Co. in East Calgary was formally opened by Mayor Andrew Davison, with Vice President F. A. Gaby representing the company. The plant has a maximum daily capacity of 5,000 bbl. of crude and produces a full range of gasoline, kerosene, distillates and gas, Diesel, domestic, and fuel oils.

Some 20,300,000 gal. of storage capacity is provided. The plant cost approximately $1,500,000; it will operate on Turner Valley crude, replacing a 2,500-bbl. plant previously operated at Coutts on Montana crude, and which has been dismantled. Crude from Turner Valley is received directly through Royalite Oil Co. pipe lines, production being contracted from some 30 wells in Turner Valley.

Refinery to Be Built Near Vancouver

VANCOUVER, B. C.—Richmond Refineries, Ltd., has been incorporated under provincial charter with head office at 626 Pender Street, West. The company is planning to build and operate a refinery near Vancouver.

Hydro-Pete Operates Saskatchewan Plant

RED DEER, Alta.—Hydro-Pete Oils, Ltd., headed by P. L. Hyde, has completed and is now operating a small refinery south of Red Deer. Products are handled by truck as far east as Rosetown, Sask.

Prof. Ipatieff Elected Member of National Academy of Sciences

CHICAGO.—In recognition of his achievements in chemistry, Prof. Vladimir N. Ipatieff has just been elected a member of the National Academy of Sciences, which has headquarters in the Smithsonian Institution, Washington, D. C. He is director of chemical research of Universal Oil Products Co., Chicago, and professor of chemistry at Northwestern University.

Professor Ipatieff is believed to be the first scientist of Russian birth ever elected to the academy. He is now, however, an American citizen.

Recently he contributed $21,000 to endow a chair of high-pressure chemical synthesis at Northwestern University. Universal joined with him in the endowment, furnishing the laboratory equipment.

The new laboratories will bear Professor Ipatieff's name. He started high-pressure reaction studies over 40 years ago and has profoundly influenced the chemistry of high-pressure reactions.

Professor Ipatieff is the inventor of the Universal Oil Products catalytic polymerization process for producing polymer gasoline from cracked gases, which is being more and more widely used in refineries throughout the world. He has been honored by various institutions for his achievements.

At present, the professor is in Europe, where he is to receive the honorary degree of doctor of chemistry from the University of Sofia, Bulgaria, on May 20, during the celebration of the fiftieth anniversary of the founding of that institution. He has also been invited by Pres. Du Pont of the French Chemical Society to be guest of honor at a joint meeting on hydrogenation of three French chemical societies in Paris, May 24 to 28.

On May 29, Professor Ipatieff will present a paper on "Activity of Mixed Catalysts" at Strasbourg, France, where chemists of many nations will assemble to celebrate a week of Improvement in Petroleum.

Pipe Line News

Socony-Vacuum to Lay New England Line

NEW YORK, May 23.—Socony-Vacuum Oil Co., Inc., has announced plans for construction of a 6-in. welded pipe line between Springfield, Mass., and Hartford, Conn., for movement of refined products between those points. Construction is scheduled to begin in the fall and should be completed before the end of the year.

To Lay 100-Mile Gas Line To Saskatoon, Sask.

SASKATOON, Sask.—Subject to approval of a natural gas franchise by the people of Saskatoon, Walter F. Thorn and associates are preparing to lay over 100 miles of transmission line to deliver gas from West Central Saskatchewan to this city. Work will be started some time this summer and completed next spring. Gas will be piped from the Lloydminster field and adjacent areas where substantial production has been developed.

Bear Creek to Driscoll Line Reported Being Planned

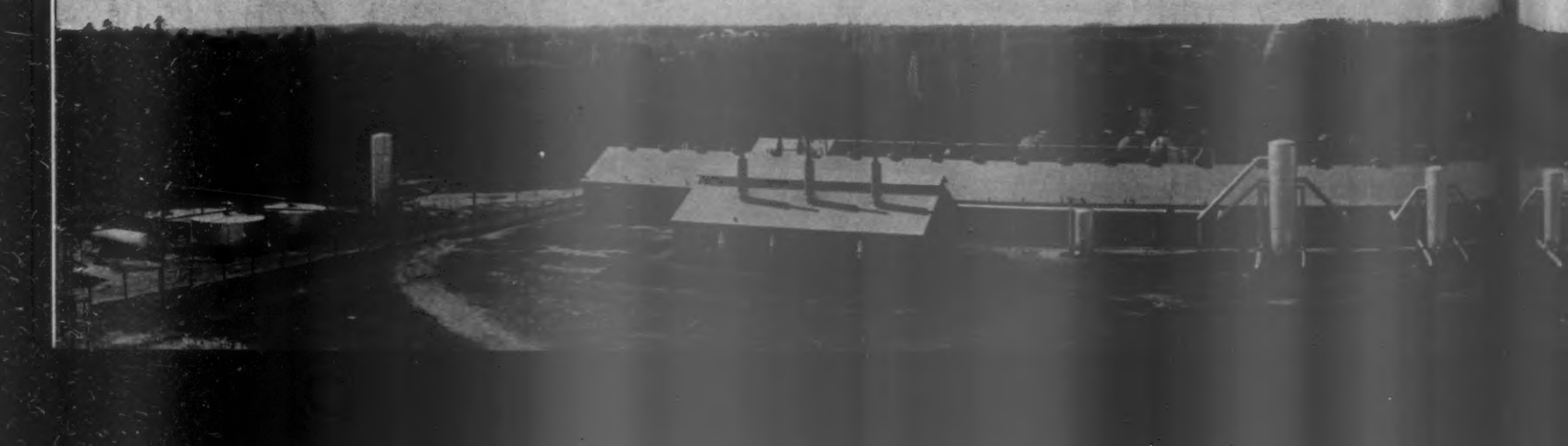
SHREVEPORT, La.—Purchasing the block and three Glen Rose gas-distillate producers in the Bear Creek area of Bienville Parish, from Seaboard Oil Co., Hunt Oil Co. was reported starting work on a pipe line from the area. The line, 6-in., will connect into Arkansas Fuel Oil Co. system at Driscoll, about 10 miles southeast.

Gas Line to Ann Arbor To Tap Detroit Line

SAGINAW, Mich.—Natural gas service for Ann Arbor within 90 days appeared likely following the Michigan Public Service Commission granting the Ann Arbor district of the Michigan Consolidated Gas Co. permission to supply the city with gas from the Texas Panhandle. The company proposes to tap the line now serving Detroit, about 10 miles east of Milan. Construction of the 21-mile connecting line from Milan to Ann Arbor, costing about $128,000, will be started about June 15.

In its order, the Public Service Commission held

Hanlon Gasoline Corp. of Tex



Michigan's own natural gas supply is "too impermanent" for Ann Arbor. The original petition for permission to bring natural gas to Ann Arbor was filed in 1937 with the Public Utilities Commission by Washtenaw Gas Co. which later became the Ann Arbor district of the Michigan Consolidated Gas Co.

Natural Gasoline

Recycling Plant Planned For Lower Gulf Area

CORPUS CHRISTI, Tex.—A recycling project to include gasoline extraction and repressuring units is to be started soon in lower Gulf Coast district.

The plant will be in the north end of the Stratton area, Nueces County, which already has a large unit, and the other in the East Alice field of Jim Wells County.

Texon Royalty Co. will build at Stratton, where its holdings are approximately 3,000 acres, lying immediately north of Corpus Christi Corp. properties. The company will drill several wells to handle its project, and three locations have been made for 6,500-ft. tests, two on the J. B. Butts lease and one on the Moseley & Dryden lease.

Tanker Strike Is Causing Little Inconvenience

NEW YORK, May 22.—The National Maritime Union strike against three major oil-tanker-fleet operators is causing only a minimum of inconvenience. Sailings have been maintained with few exceptions, according to the owners. Negotiations between the operators and the union representatives remain open.

Representatives of the union picketed the Department of Commerce in Washington for a brief period until a spokesman declared that fines totaling $50,000 had been levied against operators for alleged violation of safety-at-sea regulations. Socony-Vacuum Oil Co. stated it had not been notified of any fines levied by the Bureau of Marine Inspection and Navigation.

"On May 3," the Socony-Vacuum statement said, "the company received a letter from the bureau pointing out that the bureau had received complaints that 'some ships have departed on coastwise voyages with crews not in accordance with the minimum-crew requirements' and stating: 'Should this practice continue, the bureau will, of necessity, have to take steps to take up the certificate of inspection of the offending vessels'."

To this the company replied: "We are very glad to report from our records, which we think can be substantiated by your inspectors, that all vessels opening ship's articles are now conforming to the certificate of inspection."

Socony-Vacuum continued that the company's tankers have been operated entirely by qualified seamen possessing the proper certificates. Despite occasional delay, the company said it has its entire fleet in operation, with the exception of two vessels undergoing repairs and three vessels which have been out of commission for over 6 months.

Standard Oil Co. of New Jersey reported that since the strike call, it has had 73 sailings involving 38 vessels and only six ships were tied up at that time.

Natural Gas News

Department of Justice Moves In Panhandle Case

WASHINGTON, D. C.—The Department of Justice has asked the U. S. District Court at Wilmington, Del., to dismiss a consent decree affecting operation of Panhandle Eastern Pipe Line Co. Under the decree the Columbia Gas & Electric Corp. was to end "domination or control, direct or indirect," in Panhandle Eastern.

Thurman Arnold, in charge of the antitrust division, said Columbia and its subsidiary, Columbia Oil & Gasoline Corp., had failed to work out a voluntary plan for relinquishing any control of Panhandle Eastern, and dismissal was sought to permit "a determination of all the issues through full litigation." Judge John P. Nields set June 12 for a hearing.

Mr. Arnold said the objectives of the consent decree were to restore Panhandle Eastern to "a position of free and independent action in the production, transmission and distribution of natural gas in competition with others. The decree sought to enable Panhandle Eastern to bring to the consuming public in a large area of the Midwest a new and abundant supply of gas drawn from Texas and Kansas, and thus to make this increasingly important fuel available throughout this area at competitive and reduced prices."

Columbia Gas & Electric Corp. issued the following statement:

"The consent decree referred was entered into in 1936 between the Government and Columbia Gas & Electric Corp. and Columbia Oil & Gasoline Corp. to terminate the litigation which the Government had instituted. One of the stipulations recognized that the companies denied any breach of the antitrust laws.

"The decree specifically provided that Columbia Oil could retain without limit the stock of the Panhandle Eastern Pipe Line Co. which the Government now seeks to have it sell. In reliance on this provision and other provisions of the decree, and acting with the full knowledge and consent of the trustee appointed by the court, Columbia Gas & Electric has advanced more than $10,000,000 to build pipe lines through which gas from Panhandle Eastern has been and is now being supplied to Detroit and many cities and towns in Indiana which have not had this service. This gas is supplied at rates which are subject to public regulation and the terms of all the contracts between Panhandle and any subsidiaries of Columbia Gas or Columbia Oil have been approved by the trustee under the decree.

"Both Columbia Gas and Columbia Oil have acted in full reliance on the integrity of the consent decree and have complied with every stipulation thereof. Nevertheless, they have for some time been trying to find a way to meet the present desire of the Government to terminate the decree. To this end, last October a written proposal to obtain the complete disposal by Columbia Oil of its stock in Panhandle Eastern was submitted. Furthermore, beginning in December 1938 both companies have had many discussions with the department developing a plan for effective severance of the indirect investment link between Columbia Gas and Panhandle Eastern without the disposal of Columbia Oil's stock in Panhandle Eastern, culminating in the submission of another plan to this end last week. Neither plan has been acceptable to the Government.

"Now, after having induced Columbia Gas & Electric Corp. to spend this great amount of money in reliance on the provisions of the decree, the Government asks to have the decree set aside and the litigation resumed."

WILMINGTON, Del.—Former U. S. Senator Daniel O. Hastings, counsel for Columbia Oil & Gasoline and its president, Charles A. Munroe, filed an answer in the U. S. District Court of Delaware today to the Government's supplemental complaint, denying any domination or attempt to dominate or control the affairs of Panhandle Eastern and asking dismissal of the complaint.

East Ohio Gas Co. Asks Rehearing From F.P.C.

WASHINGTON, D. C.—East Ohio Gas Co. has requested a rehearing and stay of the order of the Federal Power Commission of April 14 which denied the company's petition for relief in connection with an order by the commission on February 14 instituting an investigation of the cost of transporting gas from the Ohio River to the Cleveland city gate, and ordering the company to file an inventory of original cost. The inventory was to show the original cost of company property used in the transportation referred to, but in the order of April 14 the commission granted authority to estimate such costs is necessary.

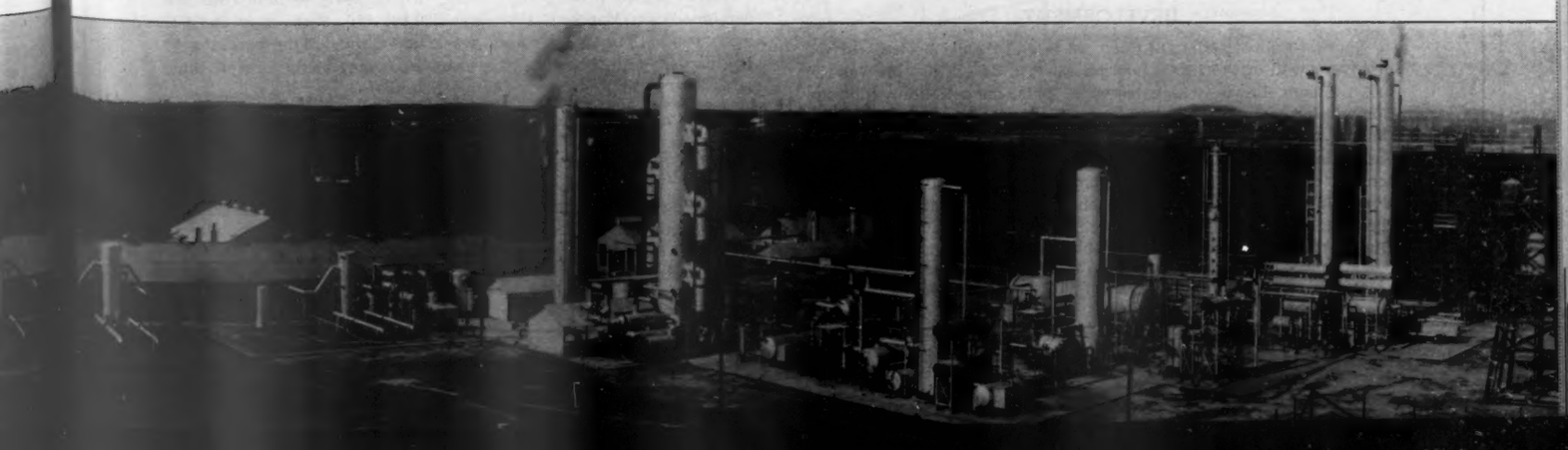
Northwestern Utilities Plans Construction Program

EDMONTON, Alta.—Northwestern Utilities, Ltd., supplying gas to Edmonton from the Viking field, has announced a construction program involving approximately $176,000. Field work will include tubing one well with 2,100 ft. of 4¾-in., and cleaning about 16 wells. A mile of 6-in. field line will be replaced with 8-in. to increase capacity of the gathering lines.

The original main transmission line was 77.3 miles, including 36.7 miles of 10¾-in. and 40.6 miles of 12-in. Since 1929 some 36.8 miles of duplicate line have been laid from Viking westward and 10.6 miles from Edmonton eastward. Of 29.9 miles still to be duplicated, about 5 miles will be laid this year, of all-welded construction. With maximum daily deliveries of 27,392,000 cu. ft., the present line has a capacity of 32,450,000 cu. ft. which this year's addition will increase to 34,078,000 cu. ft.

Extensions to the Edmonton distribution system will include a duplicate 10¾-in. intermediate pressure line in the northeast portion of the city and a 6-in. intermediate pressure line, as well as other extensions involving between 400 and 500 new services.

of Texas Plant No. 1 at Gladewater, Tex.



Service on New Fields

LEWIS AND STEFFENS FIELDS, JONES COUNTY, WEST CENTRAL TEXAS

Compiled by The Oil and Gas Journal

Approved name:
Lewis field and Steffens field, Jones County, West Central Texas.

Geographic location:
The Lewis pool is located mainly in Section 37 of Block 15, T.&P. Survey, with the eastern edge extending into the western part of Section 36 of the same block and survey. The Steffens pool is located wholly in Section 32, of the same block and survey; the discovery wells for each area being only a little over a mile apart.

Principal towns and cities near the fields:
Abilene, largest city in that area, by road lies about 23 miles to the south; Hawley, 6 miles to the southwest of Lewis, and Anson, 18 miles to the northwest. Albany, by road lies about 30 miles east of Steffens and Stanford, 25 miles to the north. Lueders lies some 12 miles to the northeast of Steffens.

Cities and towns where supply companies have branches:
Abilene, main supply center of West Central Texas, supplies bulk of the oil field equipment; Anson, with five supply stores, two tank companies and machine shops, also serves the fields. Some supplies are trucked in from Lueders and Albany.

Railways serving the area:
The Wichita Valley Railroad, a branch of the Burlington line, runs from Abilene through Hawley, Anson and Stamford to Wichita Falls. The Missouri-Kansas-Texas Railroad has a main line east and west out of Abilene and another line from Waco through Albany, Lueders and Stamford to the northwest.

Character of roads:
An improved dirt road has just been completed from Lewis to Hawley, where it joins U. S. Highways 83 and 277. North of the fields, U. S. Highway 380 passes through Albany, Lueders and Stamford. Travel in the fields and between them is over very sandy roads; thick underbrush and sand making traveling difficult.

Trucking companies:
Adequate trucking facilities are available in any of the nearby cities and towns mentioned above.

Hotels and other accommodations:
Limited hotel accommodations or modern tourist courts are available at any of the smaller nearby cities; Abilene, with some 15 hotels, offers adequate facilities.

Schools and churches:
Anson, Stamford and Albany have elementary and high schools, while Abilene has several elementary and high schools and two nationally recognized colleges. No schools or churches are situated in the fields, most of the oil field workers and families living in the nearby towns.

Electric power and gas companies:
Electricity for the area is supplied by West Texas Utilities Co. of Abilene. Electric power was recently introduced in Lewis following the building of several houses and a generator installation. Lone Star Gas Co., with district offices at Stamford, supplies the surrounding towns. Natural gas for lease operations is supplied by casinghead gas.

DEVELOPMENT

Lewis.—Fain-McGaha Oil Corp. of Wichita Falls brought in the discovery well of the Lewis pool on April 9, 1937. The well was the No. 1 Claude Lewis, which tested 87 bbls. on a 24-hour Railroad Commission test, producing from the Bluff Creek sand of the upper Canyon group, and located in the southwest quarter of Section 37. Saturation was found from 1,917-20 ft. and 1,926-35 ft. Major extension during the field's development was the Fain-McGaha Oil Corp. No. 1 Daugherty, which extended the area a quarter mile to the east, most of the extensions being made one location at a time. During the first year there were 16 producers drilled. Activity continued at a steady pace during the past year and at the first of this year there were 45 producers.

Steffens.—About the middle of June 1938 W. L. Snoddy and C. C. Dodson completed their No. 1 C. L. Steffens for the discovery well in the Steffens pool. The well was located in the extreme southwest corner of the northeast quarter of Section 32 and at that time about three-quarters mile from the eastern edge of the Lewis pool. The test was completed for a daily flow of 140 bbls. from the Bluff Creek sand drilled from 1,853-74 feet. Further drilling in the area, wells along the south edge, has found production in the Flippan lime just underlying the Bluff Creek. Due to the adjacent Lewis pool, majority of development has been to the south of the discovery well. At present there is only about a quarter of a mile separating the two fields.

Completions to date:
As of May 15 there were 56 producers in the Lewis field and 21 in the Steffens pool.

Number of operations:
In the Lewis field five wells are now drilling and two in Steffens.

Future activity:
Operators in the Lewis pool plan to drill at least 20 more inside wells in the immediate future. Due to characteristics of West Central Texas sand lense pools, no great development is forecast for either of the two pools. The Lewis pool is being steadily extended to the northeast a location at a time, but some geologists feel it has about reached its limit in that direction. Dry holes to the north, south and west tend to define it in those directions. The Steffens pool, having what is considered two pay zones, has been slowly developing southward with a predominance of Flippan lime producing wells. There is some speculation as to the joining of the two fields, but most geologists tend to discount the possibility.

Water supply:
Adequate water supplies for lease usage are obtained from shallow water wells drilled to a water sand at about 55 feet. Lack of substantial water supply discourages the use of rotary rigs in the fields' earlier life.

General geology:
Production in both fields is obtained from sand lenses of the type from which many West Central Texas fields produce. Dip is to the west-northwest. Some 20 feet of pay section is generally drilled in Lewis field wells and about 18 in the Steffens pool. No bottom-hole water is present in either field. In the Steffens pool a deeper pay section is found in wells along the south edge; there being six wells producing from a 15-foot pay section in the Flippan lime about 50 feet below the Bluff Creek.

Well spacing and production allocation:
A spacing of 440 ft. between wells and 220 ft. from lease lines has been used in both fields, or normal five-acre spacing. Allocation of the field allowable is on a per well basis, after subtracting the allowable of marginal wells. At present the daily allowable is 29 bbls. on a six-day basis or about 25 bbls. daily.

Accumulated production:
Accumulated production for the two fields (pipe line runs are combined) on March 1, 1939, was 320,861 bbl. Production in 1937 was 4,000 bbl., in 1938 the total was 248,786 and for the two months of this year 68,075 bbl. Daily average allowable at the present time is about 1,538 bbl. on a six-day week basis.

Owners of producing leases:
In the Lewis field lease owners are: Danciger Oil & Refining Co., Fain-McGaha Oil Corp., Healey & Walters, King Oil Co., Bert Fields, F. W. Peckham, Petroleum Producers Co., Ungren & Frazier, and Gregg Oil Co. Producing lease owners in Steffens are: Petroleum Producers Co., Snoddy & Dodson, S. B. Roberts Co., Sandy Ridge Oil Co., and Ungren & Frazier.

DRILLING

Type of drilling equipment used:
All but five wells have been drilled with cable tools as lack of sufficient water made use of rotaries difficult. A light gasoline rotary rig is to be moved in the Lewis field soon and several more wells drilled. Spudders powered with 110- and 150-hp. engines have operated very successfully in both fields.

Speed of drilling:
Drilling time with rotaries is about seven days, and with cable tools some 21 days are required to complete the wells.

Character of mud:
No mud problems exist in drilling wells in these fields and what rotary drilling that has been done used about 9-lb. mud.

Type of engines and fuel:
Most spudders have been powered by 110-hp. gasoline or natural gas engines or with 150-hp. Diesel engines. The one light rotary rig used was powered by a 125-hp. gas-butane engine.

Size of hole and casing program:
The following hole sizes have been adopted by most operators in both fields: A 12½-in. hole is drilled to about 80 ft., then a 9-in. hole is carried to about 5 feet above the pay where it is reduced to 6½ in. The 10-in. surface pipe is set with about 35 sacks of cement and then about 1,900-25 ft. of 7-in., 17-lb. seamless casing run to the casing point where it is set with 35 to 50 sacks.

Type bits and stems:
On the few wells drilled with rotary tools, rock bits were used from top to bottom.

Tubing used:
Practically all wells are equipped with 2-in. tubing.

Shooting and acidizing:
All wells except four in the Lewis pool were shot. Some operators have adopted the following shooting procedure: After the 7-in. casing has been set on the sand and the well drilled in, the shot is placed, after which the casing string is pulled well up from bottom. The well is then shot, the string relowered and the well completed.

PRODUCTION PRACTICES

Methods of producing oil:
All wells are completed as flowing wells, but since gas is the driving energy, flowing life of the wells will be comparatively short. In an effort to prolong the flowing life of the Lewis field, all operators joined in the building of a modern repressuring plant. Average gas volume of the Lewis field is 100,000 cu. ft. daily.

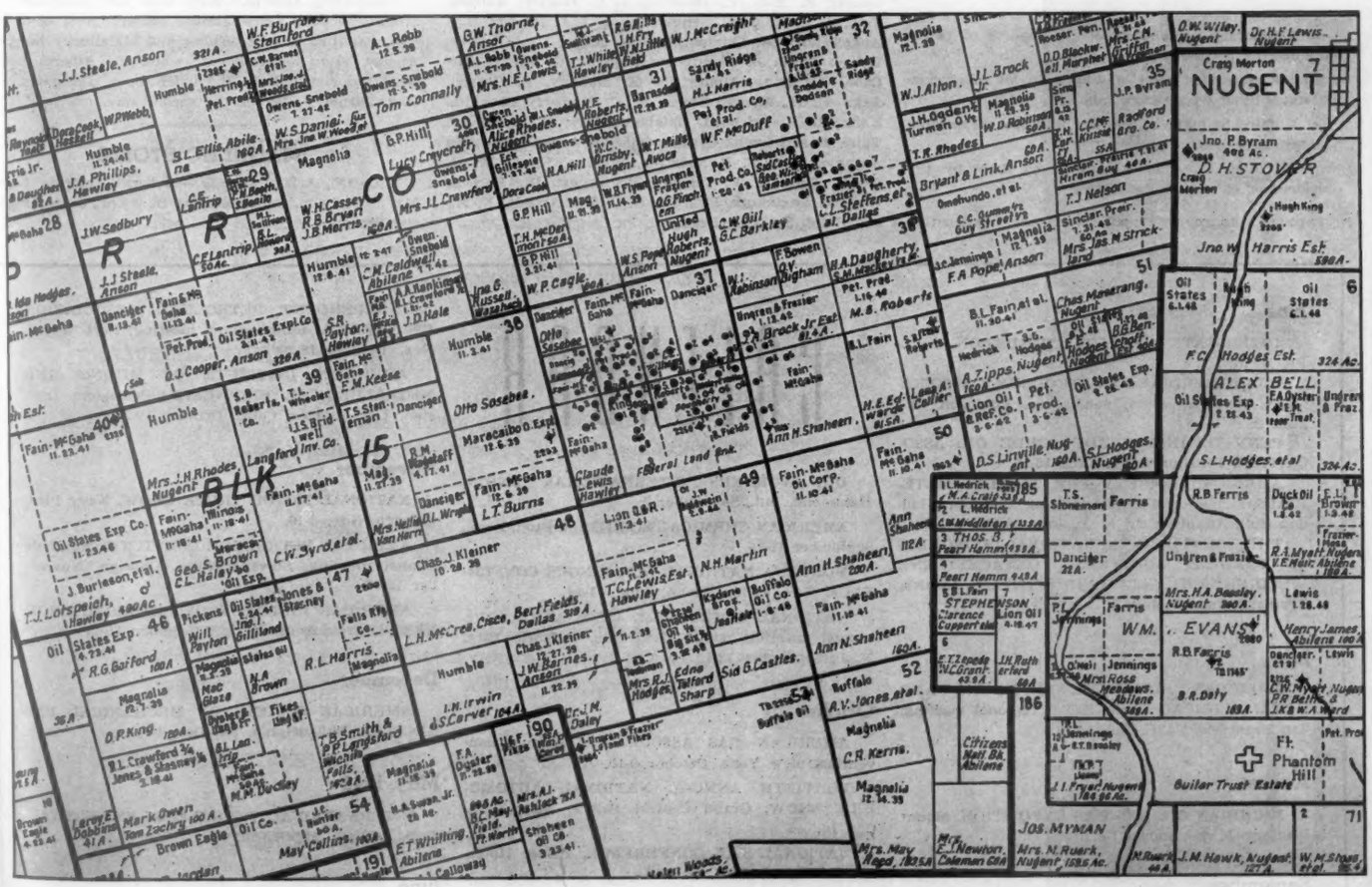
Separators and tankage:
Tankage is designed to suit the requirements of the individual leases, usual tank batteries being four 150-bbl. tanks. Central separators of 125-lb. working pressure are used.

Pumping conditions:
Some wells in each field have been placed on pump, mostly being pumped by individual jacks powered by small internal combustion engines. One central geared power has been installed in the Lewis pool. Operators are beginning to experience some trouble from the fine, floating sand cutting the pump cups. Some of the lighter wells make a little b.s. and the crude runs about 1 degree lower in gravity. Masts for clean-out work have been erected on less than half of the wells.

Water conditions:
Wells in both fields are not expected to have any water troubles since no bottom-hole water is present in the Bluff Creek.

Pipe line outlets:
Oil from both fields is gathered by Humble Pipe Line Co. and moved to its Hawley station, where it enters the company's main line to the Gulf Coast.

Type crude:
Both Lewis and Steffens crudes are typical Jones County crudes and are combined with the pipe line runs of fields in Fisher County. The crude is dark and of about 39° A.P.I. gravity.


NUGENT
D.H. STOVER
Jno. P. Byram 406 Ac.
Craig Morton
Hugh King Bros.
Jno. W. Harris Est. 580A.
F.C. Hodges Est. 324 Ac.
ALEX BELL
S.L. Hodges, et al 324 Ac.
S.L. Hodges, Nugent 160 A.
Oil States 6-1-48
Oil States Exp. 8-28-43
Lion Oil & Ref. Co. 3-6-42
Pet. Prod. 3-6-42
Oil States Exp. 8-28-43
Pet. Prod. L.16.40
Pet. Prod. 11-30-41
Pet. Prod. 1-12-42
Pet. Prod. 1-31-42
Pet. Prod. 1-31-42
Pet. Prod. 1-31

Programs and Meetings

Roeser Calls I.P.A.A. Membership Meeting at Dallas, June 6

Members of the Independent Petroleum Association of America have been called by Charles F. Roeser, president, to meet at the Baker Hotel, Dallas, Tex., at 10 a.m. June 6, to express themselves on two questions now under consideration by Congress. These concern divorcement of pipe line and marketing systems.

President Roeser urged members to attend if possible. Those who cannot were asked to express their opinions by mail, questionnaires to be returned to headquarters in Tulsa prior to the meeting when the results of the survey will be made known.

On Monday, June 5, the association's special study committee of thirty-six will meet in Dallas to complete its report on the questions submitted to it last October. This completed report will be presented to the membership on June 6.

"Many things have been corrected by the action of the committee, but all of the questions submitted should have the action of the entire membership," President Roeser said. "We need the concerted view of all of our members on each of these questions."

The special study committee of thirty-six was named following the annual meeting last October in Tulsa. To it were submitted these questions, on which resolutions had been proposed during the convention:

(*a*) Pipe line divorcement.

(*b*) Complete disintegration of all integrated companies.

(*c*) Temporary prohibition of all imports of petroleum and its products.

(*d*) Recommended total shutdown in all oil-producing states having regulatory bodies.

(*e*) Umpire to make allocations that are enforceable between oil-producing states.

(*f*) All other questions submitted to them by the president or executive committee.

Through appropriate subcommittees, exhaustive studies were made of the questions. On December 13, the full committee began a two-day session in Fort Worth. It had been decided by the committee after its appointment that a complete shutdown of oil fields was not practical and that legal provision did not exist for such a course. The question concerning prohibition of imports was also passed on early, the recommendation being that the traditional stand of the association for tariff protection and regulation by federal law of the volume of imports should be adhered to. The committee expressed itself against pipe line divorcement; against complete disintegration of integrated companies; decided that corrective measures then under way be given a chance to work before final expression was made on allocation of crude oil market among states.

Personnel of the committee of thirty-six, of which Wirt Franklin, Ardmore, Okla., is chairman, is representative of all sections of the oil-producing states and of all types of companies. One member, Judge Amos L. Beaty, New York City, died since the Fort Worth meeting.

The committee membership is as follows: K. S. Adams, Bartlesville, Okla.; J. A. Aylward, Wichita, Kans.; J. S. Bridwell, Wichita Falls, Tex.; Al Buchanan, San Antonio, Tex.; Frank Buttram, Oklahoma City; J. E. Farrell, Fort Worth, Tex.; Judge R. H. Foster, Fort Worth; James C. Graves, Saginaw, Mich.; S. A. Guiberson, Jr., Dallas, Tex.; W. S. Hallanan, Charleston, W. Va.; Jake Hamon, Dallas; Capt. B. A. Hardey, Shreveport, La.; Winston P. Henry, Houston, Tex.; George A. Hill, Jr., Houston; J. C. Hunter, Abilene, Tex.; A. E. Johnson, Denver, Colo.; C. A. Johnson, Los Angeles; Alf M. Landon, Topeka, Kans.; C. A. Lester, Dallas; Ralph B. Lloyd, Los Angeles; George N. McCabe, Cut Bank, Mont.; Joe K. Mahony, El Dorado, Ark.; E. H. Moore, Tulsa; E. C. Moriarty, Wichita, Kans.; L. H. Prichard, Oklahoma City; E. B. Reeser, Tulsa; Carl Schwyn, Cygnet, Ohio; A. A. Seeligson, San Antonio, Tex.; E. B. Shawver, Wichita, Kans.; W. G. Skelly, Tulsa; P. E. Taggart, Bridgeport, Ill.; Earl D Wallace, Lexington, Ky.; Van S. Welch, Artesia, N. M.; and Ralph T. Zook, Bradford, Pa.

Shreveport Geological Society Field Trip

SHREVEPORT, La.—Approximately 150 geologists, oil men and others interested in the geology and the oil industry of the Ark-La-Tex area are expected to attend the fourteenth annual field trip of the Shreveport Geological Society on June 2, 3, and 4, to study the Upper and Lower Cretaceous rocks of South Arkansas and northern Louisiana. The group will assemble at the Grim Hotel, Texarkana, Ark., on the night of June 1.

Petroleum Accountants Society Of Oklahoma Meeting

The Petroleum Accountants Society of Oklahoma will hold the final meeting for the fiscal year at the Tulsa Country Club on Friday, May 26. Dinner will be served at 6:30 p.m. In keeping with custom, the business meeting will be dispensed with and the evening devoted to entertainment, and furtherance of acquaintanceship.

M. H. Massey, secretary, reports the society has enjoyed another year of progress and a substantial increase in membership.

Canadian Mining Institute To Discuss Oil Fields

CALGARY, Alberta.—More than 200 delegates will attend the twenty-first annual western meeting of the Canadian Institute of Mining and Metallurgy here on August 30 to September 1, when the Alberta petroleum industry will be the chief topic. Delegates will visit Turner Valley on the second day.

MAGNETIC STORM

TUCSON, Ariz., May 17.—Moderate storms began May 15 at 7 p.m. and ended May 16, 6 a.m., central standard time.

CALENDAR

June

INTERSTATE COMPACT COMMISSION, Santa Fe, N. M.

ILLINOIS-INDIANA PETROLEUM ASSOCIATION, seventh annual conference, Robinson, Ill., June 3.

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, Pittsburgh, Pa. June 15-16.

AMERICAN SOCIETY FOR TESTING MATERIALS, forty-second annual meeting, Chalfonte Haddon Hall, Atlantic City, N. J., June 26-30.

THIRTEENTH INTERNATIONAL CONGRESS OF CARBIDE, ACETYLENE, OXYACETYLENE WELDING AND ALLIED INDUSTRIES, Munich, Germany, June 25-July 1.

July

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, regional meeting, San Francisco, Calif., July 10-17.

August

MICHIGAN OIL AND GAS EXPOSITION, Mount Pleasant, Mich., August 1-6.

September

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, New York, September 4-8.

OIL WORKERS INTERNATIONAL UNION, Hammond, Ind., September 5.

AMERICAN CHEMICAL SOCIETY, Boston, Mass., September 11-15.

MONTANA NATIONAL BITUMINOUS CONFERENCE, Sun Valley, Idaho. Sept. 11-14.

NATIONAL PETROLEUM ASSOCIATION, 37th annual meeting, Hotel Traymore, Atlantic City, N. J., September 13-15.

October

AMERICAN GAS ASSOCIATION, annual convention, New York, October 9-10.

FORTIETH ANNUAL NATIONAL AUTOMOBILE SHOW, Grand Central Palace, New York. Oct. 16.

NATIONAL TAX CONFERENCE, Palace Hotel, San Francisco, Calif. Oct. 16.

NATIONAL SAFETY CONGRESS AND EXPOSITION, Chalfonte Haddon Hall, Atlantic City, N. J., October 16-20.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, tenth annual meeting, Fort Worth, Tex., October 18-20.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, Los Angeles, Calif., October 19-20.

November

NATIONAL MOTOR TRUCK SHOW, Navy Pier, Chicago. Nov. 8-16.

AMERICAN PETROLEUM INSTITUTE, twentieth annual meeting, Stevens Hotel, Chicago, November 13-17.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Providence, R. I., November 15-17.

December

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Philadelphia, Pa. Dec. 4-7.

May 1940

INTERNATIONAL PETROLEUM EXPOSITION, Tulsa, Okla., May 18-25.

June

THIRD WORLD PETROLEUM CONGRESS, Berlin, Germany. June 9-15.

ENGINEERING and OPERATING

In This Issue

MAY 25, 1939

MAINTENANCE, REPAIR AND OPERATION OF ROTARY DRILL PIPE

By Harry F. Simons ..... *Page 48*

The author reviews practices employed in the handling of drill pipe and makes constructive suggestions as to how they may be improved.

AGUA DULCE PLANT OPERATES WITH PRESSURES UP TO 1,200 LB.

By Neil Williams ..... *Page 52*

By operating at pressures up to 1,200 lb. it is possible to minimize the pressure drop between wells and compressors at a natural gasoline plant constructed in connection with a Gulf Coast recycling project.

RADIO IMPROVES PIPE LINE COMMUNICATION FACILITIES

By W. T. Bulla ..... *Page 57*

The use of radio during emergency conditions occurring in the course of pipe line operation is discussed with the object of showing the possibilities of this means of communication.

SAFETY—CONICAL GUARD OVER POWER ECCENTRIC ..... *Page 58*

In safeguarding pumping equipment, producing organizations are confronted with problems which call for ingenuity. A simple device for eliminating one type of hazard is described.

DESIGN OF CASING PROGRAMS

By J. O. Hills ..... *Page 60*

The importance and cost of casing programs justify careful engineering design based on the best available information regarding strength and loading conditions. Tables accompanying this paper will be of value for future reference by drilling and producing organizations.

OPERATING KINKS PRESENTED BEFORE N.G.A.A. ..... *Page 56*

METALS PROGRESS—*By W. T. Nelson* ..... *Page 66*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 68*

Satisfactory Service of Rotary Dependent Upon Care in

By HARRY F. SIMONS

Design and materials used in the rotary drill stem have been constantly improved to meet the abuse due to the increase in the size and speed of the surface machinery. Improvements in the bits and changes in the speed of rotation so affect this problem that one trouble is no sooner eliminated than another arises to take its place. The situation takes on added significance when considering the statement of one drilling contractor that 80 per cent of the troubles occurring in the drill stem are a result of its manner of operation.

When smaller boilers, lower steam pressures and smaller engines were in use and wells were being drilled to shallower depths compared to the deep wells of today, there were many failures in the drill stem. Due to the advances in design of the drill stem, many difficulties which would arise today have been averted. However, cost of operation directly chargeable to wear on the drill stem is as important to the contractor drilling shallow holes as it is to the one engaged on the deeper work.

The principal change in the operation of drag type bits has been the increase in the rotating speed, speeds of 125 r.p.m. for the larger bits and 250 r.p.m. for the smaller bits are now not uncommon. These speeds were impossible formerly for several reasons: the old engines could not develop the torque to turn the pipe, the bits were not capable of withstanding this speed and certainly the old drill pipe could not have withstood the shocks accompanying these speeds. Drag bits are still used for drilling a large part of the footage in the Gulf Coast areas and in California; they are still used widely when drilling the upper shales in the Mid-Continent areas. When used suitably in the proper formation they have a high rate of penetration and a consequent reduction in the time and cost of the well.

While this type of bit demands that the drill pipe withstand a greater torque many of the problems accompanying the running of a rock bit are not present. Tool joints are tightened to their greatest extent a short time after the joint is run into the hole even though the joint was not completely tightened at the time of installation. A good thread lubricant on the tool joint is essential as the joints may become so tight that breaking the joint when coming out of the hole is only effected after considerable effort and often destruction of the tongs and jerk lines. The bouncing and jarring accompanying the drilling of conglomerates and "rough" formations are generally avoided by running less weight or using a rock bit to drill the particular section.

A wide range of rotating speeds and bit weights are used with the modern rock bit; the old type bits could have withstood neither the modern high speed nor the weight. Under present operating conditions a few hours in the hole is all that could be expected of this type bit before the cutters would become locked.

Higher steam pressures, larger internal combustion engines and electric motors, and pumps having an 18 or 20-in. stroke have increased the volume and pressure of the mud passing through the drill pipe. Some operators use as high as 1,200-lb. mud pressure, although many have found that the increase in drilling speed is more than offset by an increase in the number of pumpouts between the tool joint and pipe. Streamlining of the inside of the drill stem by introduction of the full hole joint and the external upset-internal flush pipe has reduced the surface pressure required to obtain an effective pressure at the bottom of the hole.

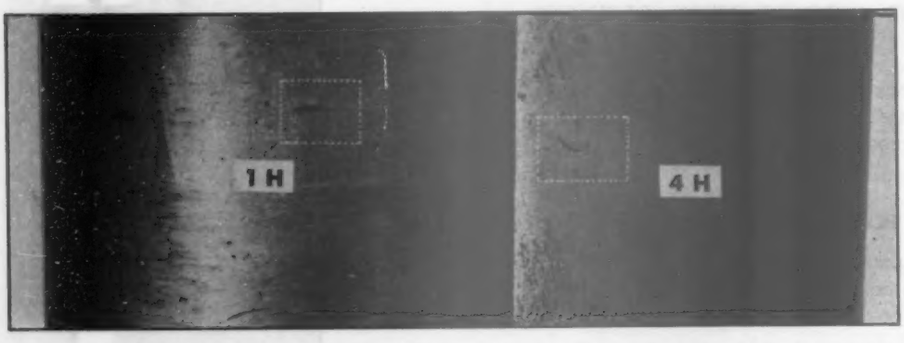
Speeds Up to 400 R.p.m.

Some operators are using speeds up to 400 r.p.m. on rock bits and others are using 40,000 lb. bit weight where 20,000 lb. would have been considered excessive in former days. The bits stand up under this terrific pounding and the surface equipment is generally large enough that it suffers no ill effects. The drill pipe transmits the energy to the bit, but the effect of improperly used speed and weight on this part of the equipment is overlooked in many cases. Coupled with other forms of neglect, the above frequently leads to failures that could have been avoided or to excessive wear that leads to the early discarding of the tool joint or pipe or both.

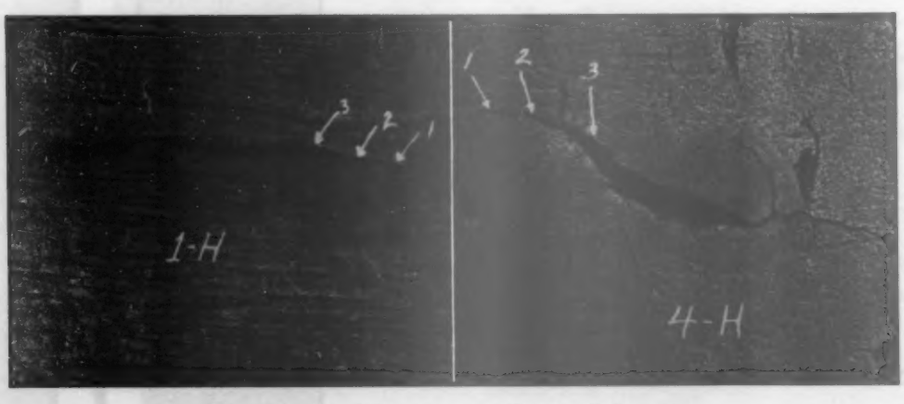
The use of high speeds and greater weights demands that the drill stem be designed from bottom to top to meet the increased strains placed on it. This generally includes a long heavy section just above the bit, some operators using as much as 400 ft. of drill collar. These drill collars must be specially made of alloy metals that will resist the shock and pounding of the bit and the vibrations that accompany drilling. One contractor inspects each drill collar in the section to determine its balance, thus preventing the eccentricity that accompanies an unbalanced shaft turning at high speeds. Another factor influencing the construction of this low section is the difficulty of recovering the fish in the case of failure, thus making it essential that all failures in the drill collars be avoided if possible.

Properly designed drill pipe and tool joints, that will stand the varying torques and vibration and will not impede the mud flow, and a straight kelly joint are also essential.

Regardless of the design and construction, satisfactory operation will be due to a great extent to the speed at which the drill stem is turned, the weight carried on the bit, and the straightness of the pipe. While the heavy section at the bottom will give a plumb bob effect of the drill pipe, and at the same time provide enough weight to make the bit dig satisfactorily, a crooked joint of pipe will create enough strains in the string to eventually induce a failure. Proper rotating speed is best obtained by studying the actions of the pipe; in the case of too much chattering and a tendency



Scars on drill pipe caused by corrosion fatigue. There is only a small crack on the outside; the pipe may have a pit of considerable depth on the inside



Scars on the drill pipe magnified to 9 diameters

Drill Pipe Is Operation

to bounce, many contractors and superintendents insist on increasing rather than decreasing the speed and thus finding a rate of rotation that will not be in harmony with other factors affecting the pipe.

Many strings of pipe designed similar to the one outlined above are being used successfully and many predictions of higher speeds have been made. When properly handled they have been successful in reducing the time per well, in keeping the hole straight and in eliminating many of the drill pipe troubles. Doubling the length of the drill collar is effective for the smaller sizes of pipe, but for the larger sizes some contractors are using 10 times the amount of drill collar formerly used.

Increasing the weight and speed without redesigning the drill stem is another matter altogether. Much of the trouble and expense accruing to contractors because of drill pipe failures and increased wear has been due to a failure to modernize the design of the drill stem while at the same time endeavoring to obtain more footage by adding weight and speed. One contractor instructed his men to rotate the bit at 250 r.p.m. at all times and to carry not more than 2 points (approximately 1,000 lb.) weight on the bit on a well being drilled in a section notorious for its sloping formations and heavy gas. The mud was closely watched and properly conditioned and on other holes in the same area little trouble had been experienced previously in getting in and out of the hole. Trouble began to occur while making trips, the bit sticking in many spots and only going through them after considerable working of the pipe. The contractor finally decided that the speed was excessive for the weight being used on bottom of the 5⅛-in. Range 3 pipe and had his men reduce the rotating speed to 200 r.p.m., the trouble immediately disappearing.

Another difficulty arose due to a combination of the heavy mud and the high speed and light weight. Excessive wear soon became evident on the tool joint threads due to the joints becoming loose while drilling and allowing a slight passage of the drilling fluid. On succeeding trips the pipe was tonged up with six wraps on the cathead, but abrasion of the threads was only partially eliminated. The heavy mud would not flow from the pipe because of its viscosity, and due to the hole being kept full while making a trip to prevent blowouts, drillers were prohibited from "chasing the pipe. Each stand broken off had about a foot of drilling fluid in it and the tool joint was full of mud which dried in the thread forms. By plunging a stick into the pipe to displace the fluid from the tool-joint box and then washing the remaining mud away with a small stream of clear water, a clean joint was obtained and further trouble eliminated.

The results of using more speed and less weight are not nearly so harmful as using more speed and heavier bit weight without adding to the weight of the drill collars. The entire drill stem is in compression and the shock of the bit is transmitted to the swivel when all of the weight of the pipe is used. The pipe is bent due to the weight and runs against the walls of the hole, doing extensive damage to the pipe, hole, and tool joints. A universal action is set up at the tool joint and the conditions favorable to a break-off created; the repeated flexure of the pipe as it is rotated in compression is the opening wedge for corrosion and a subsequent washout in the body of the pipe.

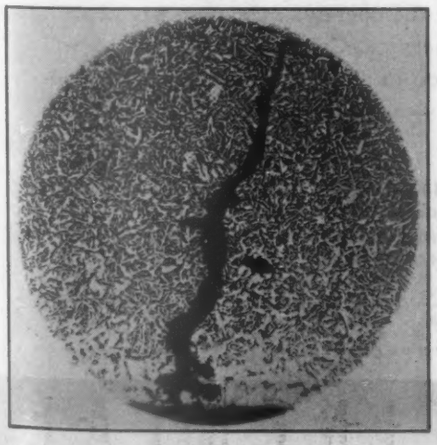
This latter phenomena is little understood by some of the drillers but it explains the failure of many strings of pipe, while other pipe made at the same time, in the same mill, by the same process experienced no such failures. The cutting out due to corrosion is one of the most pressing problems confronting the users and manufacturers of drill pipe. It is being met on one hand by efforts to reduce the corrosive effects of the drilling fluid and on the other by the manufacture of drill pipe from alloys that will have all of the desirable qualities of hardness and toughness and at the same time be corrosion resistant.

Experiments along these lines have shown that drill pipe corrodes rapidly in water or ordinary drilling fluid if it is bent only slightly, similar to the conditions when the drill pipe is carrying too much weight and wobbling in the hole. If left undisturbed in either water or rotary mud, corrosion is not nearly so rapid.

These failures have a striking similarity in that the break occurs around the circumference of the pipe after a mud cut has eaten part of the pipe away. If the remainder of the joint is inspected, other zones of weakness will be noted occurring in a plane normal to the pipe's axis. Some leaks have been discovered in the pipe where the hole on the inside was at a point approximately 90° from the hole on the outside of the pipe. It has generally been found that a corrosion failure in a string of pipe will be followed by many more and the entire string will be abandoned and used for line pipe. Proper use of the pipe to prevent flexing in the hole would prevent many strings of pipe from being discarded before they have served the time expected of them.

A more apparent effect of too much weight and speed is found in the actual distortion of the joint.

Upper: *Derrick is obviously out of plumb as the kelly joint does not hang directly over the pipe in the hole.* **Lower:** *Damaged threads on box and pin caused by strain due to the derrick being out of line. (The double-pin sub used to connect the kelly and drill stem has been removed in the upper photo)*



Cross section of scar at Station 1 on Specimen 4H; magnified 125 diameters

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This is first noticed when the pipe will not stand in the derrick without being tied in or turned so the bend is toward the thribble board. Some stands may actually be "cork-screwed." The next result of this abuse of the drill pipe soon follows with the tool joints being worn on the side 180° from the bend in the pipe. If the joint is not laid down immediately it will soon wear to the point where it is only one-fourth the thickness of the opposite side. When mated with a good joint, the other joint is also worn and before long the tool joints on the entire string will have to be replaced.

The cost of straightening the pipe is very little in comparison to its value, the price generally being from $1.25 to $1.50 for 5$\frac{5}{16}$ and 6$\frac{5}{8}$-in. and from 75 cents to $1 for 3$\frac{1}{4}$ or 4$\frac{1}{2}$-in. pipe. Straightening of kelly joints and drill collars runs proportionally higher. As the value of the pipe is from 30 to 50 times the cost of straightening, it is a good investment. One contractor operating several rigs in a field where great difficulty is experienced in keeping the holes vertical has a pipe straightener that he keeps with the rigs. A joint that is crooked can be replaced and the drilling crew can straighten it at their leisure. In an article, "Erection and Care of Pumping Derricks" (The Oil and Gas Journal, Dec. 1, 1938), James E. Dyer points out that drillers frequently handle the pipe in a manner to cause excessive shocks on the derrick and also on the pipe. Many unnecessary shocks are thus forced on the drill pipe and undoubtedly some failures result.

Derricks out of plumb are unsafe, as pointed out by Dyer, but a recent case showed where they were also unusually hard on the drill pipe due to the kelly being forced out of line and causing the drill pipe to wobble. Plumbing the derrick corrected the trouble and stopped excessive wear of the pipe; skidding the crown is only a temporary expedient and weakens the structure. In some cases the derrick is so for out of plumb that the crown cannot be skidded far enough to make the hole line up.

Preventing Stuck Pipe

Keeping the hole full while withdrawing the drill pipe has prevented many stuck strings of pipe, eliminated delays, and removed one of the severe shocks that sometimes causes bending of the pipe. When the hole is full of mud it is not nearly so apt to bridge, thus causing the pipe to "hang up" while going in the hole. In many cases the pipe stops as suddenly as when it hits the bottom of the hole; if it is being lowered rapidly, a bent joint is the result. This is particularly the case when a regular joint is being used in place of the drill collar or a core barrel is being run in the hole. In some cases these have been kinked so badly that the pipe wall or the core barrel were worn completely through in 8 hours' running time.

Rotating the pipe on the slips is sometimes necessary to get through a bridge, but many drillers have found that elevating the pipe just above the bridge and turning it from 90° to 180° is often more effective. This is particularly effective when the hanging up is due to a crooked joint shortly above the drill collar, which causes the bit to strike a ledge formed by the washing away of a soft formation just above a hard one.

Much of the wear on the tool joint threads is now being avoided by spinning the pipe up slowly and then tonging with at least as many wraps on the cathead as the nominal size of the pipe. Some contractors insist on using from one to two more wraps if only light weight is being run on the bit and there is no danger of the joint becoming loosened. The extremely large catheads used on some rigs require neither the number of wraps nor a vigorous pull to exert the required pressure on the tongs. The practice of "making the fire fly" (spinning the pipe so rapidly that sparks result) is now frowned on. In this connection, it is also noticed that a derrick out of line makes the spinning of the pipe more difficult and a badly crooked stand is almost impossible to spin. Some strings of pipe have become so crooked that many of the stands can only be made up by tonging. The damage to the thread forms in such cases is enormous. A joint that spins up too easily or jams after a few revolutions is worn and should be repaired.

Spinning of the rotary table while breaking out a joint has been replaced by turning the table just enough to unscrew the joint. Heavier driving equipment requires only a slight opening of the throttle to turn the roller bearing rotary tables. The making up and the breaking out of the pipe will in time wear the tool joint thread, as it must support the weight of the stand while being made up and tension must be kept on the spring hook to make the pin jump clear of the box when it is unscrewed. Manufacturers have increased the hardness of the joint to reduce this wear and the external abrasion due to contact with the walls of the hole. One manufacturer has the same thread for the pipe connection as for the pin and box connection and by turning the tool joint around a new operating face is presented.

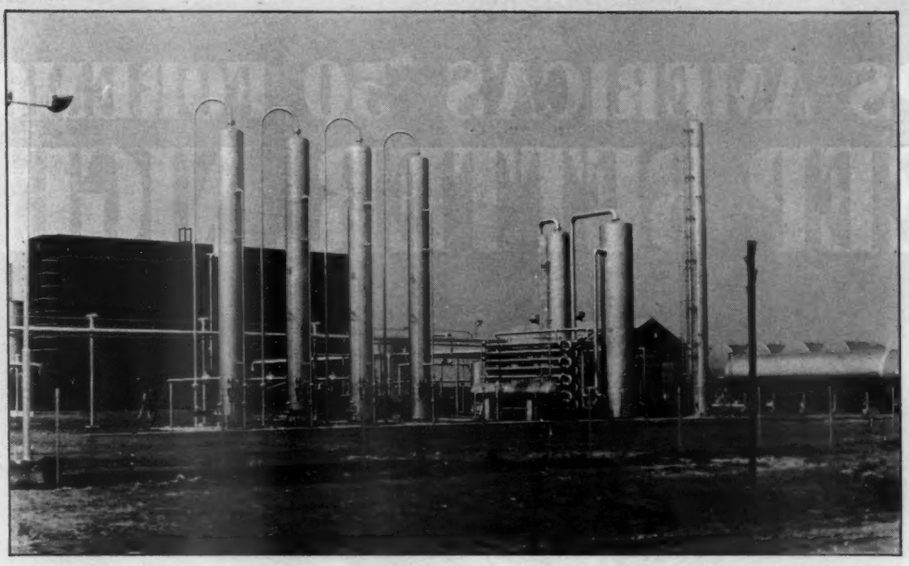
Upper: Crooked drill stem indicated by one stand of pipe overlapping the other. Lower: Another indication of crooked pipe is the evenness with which it lays against the lazy board in the derrick

Considerable damage is inflicted on the threads of the pin and box connection by dropping the pipe too far when stabbing the stands while going in the hole. A slight burr in the thread will lead to further galling with eventual destruction of the thread body. Any nick on the face or bevel of the joint will also cause galling and will at the same time prevent the joint from being made up sufficiently to prevent wobbling while in the hole.

This part of the operation is carried out at high speed and a good drilling crew will make many trips without damaging a joint; whenever a joint is damaged in any way it should be repaired at

(Continued on Page 65)

Left: Cross section of scar taken at Station 3 on Specimen 4H; magnified 125 diameters



General view of Agua Dulce Corp.'s gasoline plant in Agua Dulce field, Nueces County, Texas Gulf Coast. Three high-pressure absorbers and one low-pressure reabsorber at left

Agua Dulce Achieves Absorption at Pressures Up to 1,200 Pounds

By NEIL WILLIAMS

High pressure absorption, hitherto considered impracticable, is rendered feasible in gasoline plant by combination of special oil and control factors, resulting in worthwhile economies in operation.

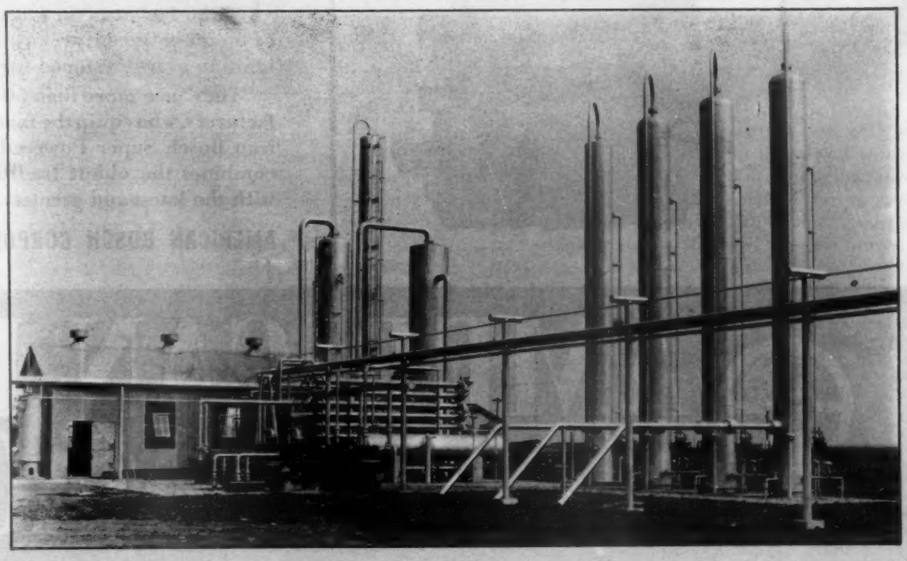
Absorption at pressures up to 1,200 pounds is being accomplished by Agua Dulce Corp.'s new gasoline plant in the Agua Dulce field, Nueces County, Texas Gulf Coast. Operating in conjunction with a gas recycling project, this minimizes pressure drop between wells and compressors, facilitating more economical and efficient return of the residue gas to the producing horizon.

Provided for only in one previous plant, absorption at such high pressure generally in the past has not been considered feasible. It is being made applicable in this installation by use of a special absorption oil, and by control of circulation rate consistent with the higher pressures and volumes. As operated there has been no appreciable entrainment of oil overhead in the stripped residue gas to the compressors.

The absorption oil is a low cold test product having a gravity of 32° to 33° A.P.I., an initial boiling point at 425° F., and an endpoint of 650° F. The boiling point is approximately 25 degrees above the endpoint of the liquid product from the wells, the endpoint of the latter being around 400° F.

No separation of liquids takes place ahead of the absorbers. The entire production of the wells feeding the plant, consisting of gas and its distillate content, is run direct from the wells, through the field gathering system, to the absorbers. There are three absorbers, operating in parallel, to which the well production is charged through a manifold hook-up that permits the operation of any one, two, or all of them.

Absorbers are of Tulsa Type with their capacity designed to correspond with that of the compressors, each absorber providing suction for two compressor units. As one compressor unit has a capacity of 10,250,000 cu. ft. of gas daily, each absorber can handle about 20,500,000 cu. ft. of gas daily. Each absorber is 38 feet high and 40 inches (O.D.) in diameter, with a 2-inch wall thickness. Double mist extraction is employed. Rich oil levels are controlled by Hanlon-Waters regulators. Specific gravity of the residue gas is .59, indicat-



Back view of plant; high-pressure oil-circulating pump shown in left center foreground. Absorbers at right and distillation and stabilizing units in center rear

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ing a very high degree of efficiency in stripping.

Oil circulation rate varies with the temperature of the gas, varying 2 to 4 gallons per 1,000 cu. ft. of gas up to a temperature of 100° F. The system is entirely closed and is operated without a lean oil accumulation tank. Loss of oil is held to a minimum due to the elimination of entrainment with the residue gas from the absorbers and efficiency in distillation. Only a very small amount of make-up ever is needed. Oil is charged to the absorbers by a high-pressure 18-inch by 5-inch by 18-inch duplex plunger-type pump taking suction from the steam turbine driven centrifugal pump.

The rich oil charge from the high-pressure absorbers is vented down to a pressure sufficiently high to permit gravity flow through the remainder of the distillation system. The plant in effect is a combination natural gasoline plant and refinery and is equipped to produce three different products, namely:

1. Natural gasolines of varying specifications.
2. Motor fuel gasoline.
3. Naphtha or kerosene.

Although all these products are not made simultaneously, control of the plant is such that the output can be turned to any of the above products desired to meet market requirements. Motor fuel being made is a 9½-pound test product with a 65-octane number, having an initial boiling point of 98° F. and an endpoint of 390° F.

Distillation equipment and practices are conventional. The still has a separate dephlegmator, which is equipped with eight bubble plates with provision made for drawing offside from any plate, and a side stripper. The blend stock stream is taken from the second plate from the top. Equipment for the distillation unit, as well as for absorbers, is of Tulsa Type.

Auxiliary facilities include a 3-foot by 18-foot rich oil vent or surge tank, into which the rich oil from the high-pressure absorbers first is charged; a bank of eighteen 8-inch Tulsa Type exchangers with three Hanlon-Waters vent traps, and a 16-inch steam preheater for final rich oil preheating. Lean oil-rich oil heat exchange is employed in the exchangers as is customary.

For motor fuel manufacture, the still is operated for a temperature of 390° F. It has two internal heating elements, through which superheated steam is passed in parallel, removing the superheat. With superheat removed, the steam, carrying a back pressure of 45 to 50 pounds, then is used in pumps and turbines. Exhaust steam, except a portion used for stabilization reboiler duty, is reheated with high-pressure superheated steam for processing purposes in the still.

The plant has a closed steam and condensate system, in which exhaust steam loss is kept at a minimum, preserving soft water and reducing boiler water make-up requirements to an unusually small amount. All used steam is returned to the condensate recovery system. The latter is a typical three-stage installation.

Left: *Interior of compressor plant, having six 300-hp. engines with two compressors each*

Below: *Combined manifold installation for incoming and outgoing gas. On the incoming hookup there are three lines, one to each of the three high-pressure absorbers. On the outgoing hookup are three lines, one from each two compressors*

Boiler feed water has a final temperature around 330° F., and is pumped to the boilers by a Worthington plunger pump, outside packed, 10-inch by 6-inch by 12-inch pump controlled by a Copes excess pressure governor. Levels in the low- and high-pressure condensate tanks are controlled by Hanlon-Waters remote liquid level controls.

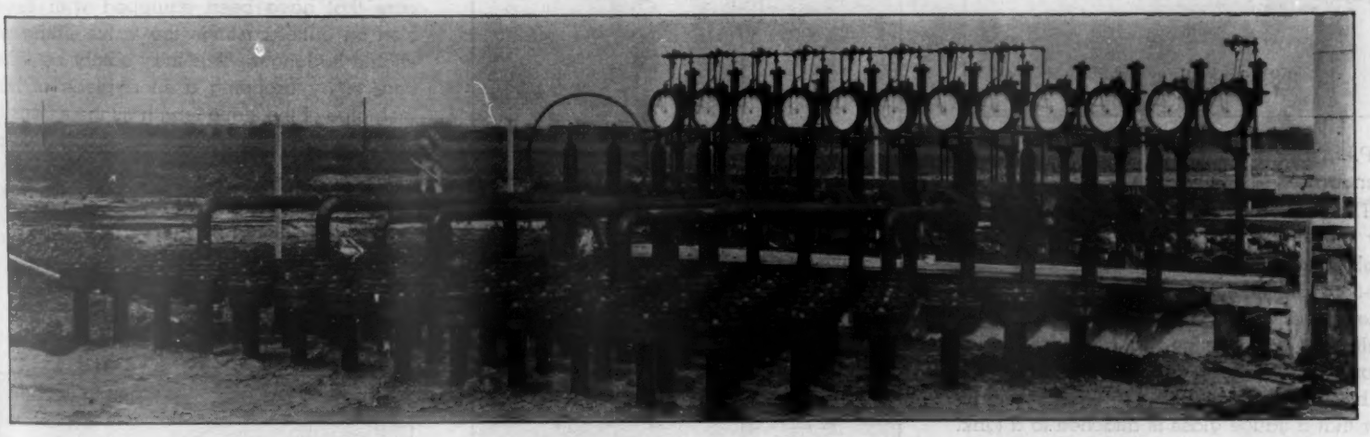
In the steam-plant installation are four Farrar & Treft 125-hp., 300-pound working pressure, oil country type boilers equipped with Broderick superheaters. Normal operation of the boilers is at 275 pounds gauge pressure. Levels in the boilers are controlled by Copes liquid level controllers with high- and low-level alarms.

Vent gas, taken overhead from the rich oil surge tank, raw make tank and other plant points, supplies all fuel gas requirements, both for boilers and compressor engines. This has been an important factor in economical operation of the plant. The vent gas first is processed through a low-pressure absorber, where it is stripped of any gasoline fractions it might contain. Rich oil from this absorber is pumped back into the system by an 8-inch by 5-inch by 12-inch simplex pump.

Precautions are taken to keep plant fuel at a minimum, limiting it to plant requirements, as it is desired to return all gas possible to the producing horizon for pressure maintenance purposes. Fuel requirements are comparatively low, due largely to the conservation and efficient utilization of steam. Orifice plates are in all gas lines, and an accurate record is made of gas flow at various points.

Six Worthington 11½-inch by 3⅞-inch by 12-inch, LCE-8 type, 300-hp. engines, each having two compressor cylinders, comprise the compressor plant. These give a total of 1,800-hp. Compressor suction is taken direct from the high-pressure scrubbers, two compressor units to each absorber, at a pressure of 1,100 to 1,200 pounds. Discharge is at 2,000 pounds maximum, at which pressure the gas is returned to the producing horizon through two injection wells. Compressors are provided with clearance pockets to take care of future variations in capacity requirements.

Condensers and oil coolers are of atmospheric type, being supplied by Western Supply Co., which designed and built the entire plant. Water for hot coils is circulated from pit water. Water to cool oil coils and final condensers passes over the 13-bay cooling tower. Rate of water circulation is kept low, which is necessary on the Gulf Coast because of the humidity and absence of early morning breeze.



Incoming gas to the absorbers and outgoing gas from the compressors to the injection wells passes through a combined centrally located manifold installation. Here, all meters for measurement of the gas in and out are located. The manifold design is such as to permit a high degree of flexibility in control of the gas. At present it has provision for 12 wells into the plant, but extensions to care for additional wells or outlets can be made easily if needed. The producing sand being repressured is in the 4,800-foot horizon, in which main development in the area is taking place.

The plant installation includes a conventional stabilizing unit, four 24,000-gallon gasoline storage tanks, five 11,000-gallon low-pressure stock tanks, together with other conventional auxiliary equipment. The loading rack is located near Banquete, approximately 4 miles distant. Production of the plant is being handled by a jobber, part of which is loaded into trucks at the plant for local distribution.

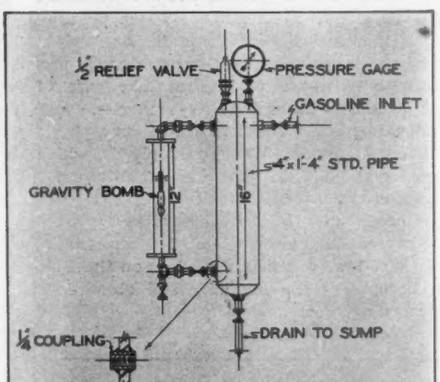
Operating Kinks Shown at N.G.A.A. Meeting

Stationary Apparatus for Taking Gravity of Volatile Gasoline

FIRST PRIZE, CLASS C

GLENN WALLACE, chief operator
Phillips Petroleum Co., Bryant, Okla.

The device, as herein described and as shown by the sketch, is designated as a stationary apparatus for determining the



A.P.I. gravity of volatile gasoline using standard hydrometer.

The apparatus consists of a section of 4- by 16-inch pipe, orange peel welded for high-pressure service, equipped with quarter-inch pressure-gauge connection, supply line, equalizing line, and drain (to sump), half-inch pop valve, and a standard hydrometer. The glass case is attached to the 4- by 16-inch gasoline pot in the same manner that a gauge glass is attached to a tank. The glass hydrometer case is surrounded by eighth-inch mesh hardware cloth for purposes of safety.

To operate this device, the pot (and hydrometer case) are both purged of air by running gasoline through the device and out the drain. The supply is then closed off and the apparatus allowed to drain to atmospheric pressure, but no air is allowed to enter. The drain is then closed off and the gasoline supply valve opened allowing the gasoline to enter the device until a sufficient amount is let in to cause the hydrometer to float. The gravity observation is then noted. The pressure gauge is observed while samplying and high pressure on the device should not be allowed. The half-inch pop valve is an extra safety precaution and should be set at 30 pounds, or 20 pounds less than the glass case will safely withstand.

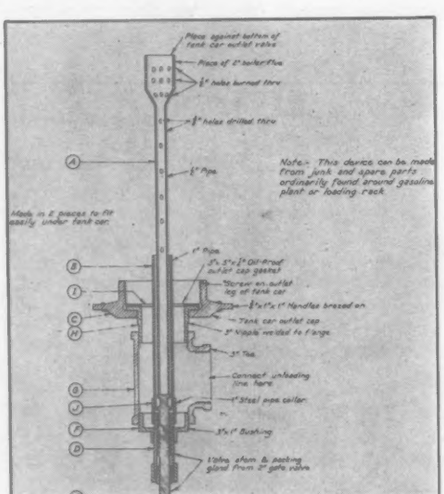
The device is simple, safe and practicable. The hydrometers cost about $2.90 each. A considerable saving will result in the reduction of hydrometer breakage. Gasoline gravities are reasonably accurate since no venting or weathering can take place.

Device for Opening Tankcar Outlet Valve

FIRST PRIZE, CLASS D

F. H. TOWNSEND, plant superintendent
Lone Star Gas Co., Gordon, Tex.

In order to unload a car of natural gasoline it is usually necessary to vent the car down until there is practically no pressure in the car in order to remove the dome cover to reach and turn the handle which raises the outlet valve. This causes losses that in


Note:- This device can be made from junk and spare parts ordinarily found around gasoline plant or loading rack.
Made in 2 pieces to fit easily under tank car.
Connect unloading line here
Turn to raise or lower tank car outlet valve.

the summer run up to 8 to 10 per cent of the content of the car and causes a serious fire hazard. Due to the fact that it is sometimes desirable to unload a tankcar of gasoline through the bottom outlet valve without venting the vapors off of the car it is necessary to lift the bottom outlet valve without removing the dome cover to reach the bottom outlet valve lever. Also when cars are loaded with the regular dome cover in place the bottom outlet valve may be lifted and reseated with this device to eliminate leakage while loading.

After tankcar outlet cap has been removed from the outlet casting, valve lifting rod (A) is inserted into outlet casting from beneath with large end up. Remainder of apparatus is placed directly beneath, and valve lifting rod (A) is allowed to drop into guide (B). Complete apparatus is then lifted up and fastened to outlet casting by tightening ring (C). The unloading line is then connected to the side outlet of the 3-inch tee. Tankcar outlet valve may then be pushed up and opened by screwing in on valve wheel and stem (E).

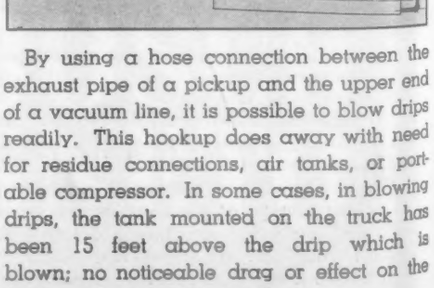
Valve lifting rod (A) is of such length as to fit loosely in outlet casting when valve wheel (E) is in down position. For use on

cars that have been equipped with extension on outlet castings the valve lifting rod should be longer. This may easily be taken care of by dropping a short piece of half-inch pipe of the same length as the extension into guide (B) when using the apparatus on such cars.

Convenient Drip Blower

HONORABLE MENTION, CLASS D

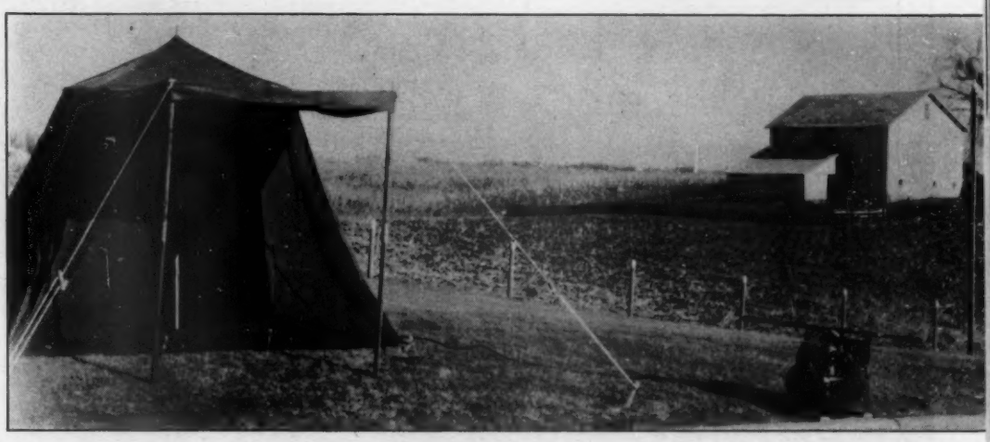
C. C. RHODES, plant operator
J. E. Crosbie, Inc., Fittstown, Okla.



By using a hose connection between the exhaust pipe of a pickup and the upper end of a vacuum line, it is possible to blow drips readily. This hookup does away with need for residue connections, air tanks, or portable compressor. In some cases, in blowing drips, the tank mounted on the truck has been 15 feet above the drip which is blown; no noticeable drag or effect on the truck motor was observed.

Radio Improves Pipe Line Company's Communication Facilities

By W. T. BULLA
Natural Gas Pipeline Co. of America



When radio is mentioned we normally think of radio broadcasting from which we receive some entertainment, and amateur radio which affords many an individual an interesting hobby; however, of late there has been an increasing number of radio services, each expanding in itself.

The Federal Communications Commission, in assigning frequencies in the radio spectrum, has made it possible for many organizations to have radio equipment for communication during an emergency jeopardizing life, property, public safety, or for essential public service.

The Natural Gas Pipe Line Co. of America, with headquarters in Chicago, owns and operates a 24-in. gas pipe line which extends from Texas to Chicago and supplies natural gas to Chicago as well as to a number of communities in Nebraska. Iowa, and Illinois. Authority was granted and licenses issued covering the operation of six radiotelephone stations, namely, KIPI, KIPT, KIPQ, KIPR, KIPU, and WAGQ, all located in Nebraska, Iowa and Illinois.

Radio service for this organization did not displace any other means of communication as the Natural Gas Pipe Line Co. owns and operates an extensive private telephone system comprising several thousand miles of copper telephone circuit, pole lines, superimposed telegraph circuits, telephone repeaters, and other communication equipment; also a number of leased telephone circuits and facilities which are supplied by commercial telephone and telegraph companies.

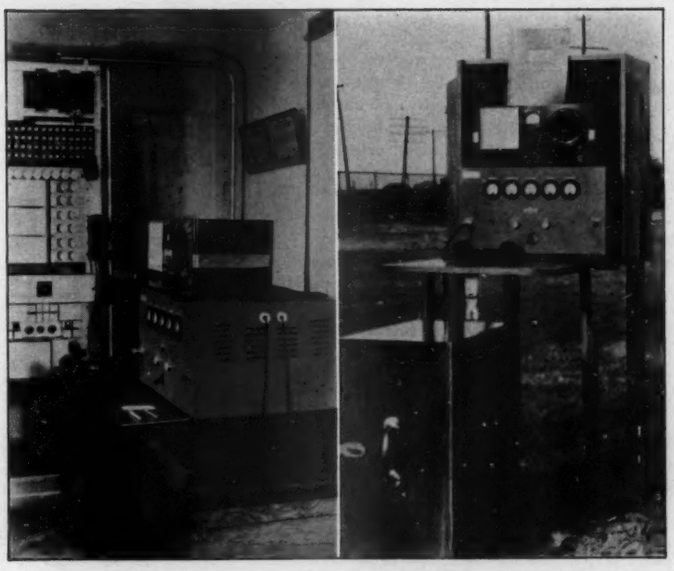
Having an organization looking after telephone and telegraph communication simplified the problem somewhat as these employes were familiar with many electrical fundamentals which were helpful in understanding the problems associated with radio.

The first step necessary was to determine the type of the transmitting apparatus as it is necessary to give a complete explanation of the circuit layout in the "Request for a Construction Permit," to the Federal Communications Commission. To determine what equipment was available and most suitable for the use of the pipe line company, we made a study of equipment in use for a number of services including police, marine, and air line. The Collins transmitter manufactured by Collins Radio Co., of Cedar Rapids, Iowa, was our choice. Then we were in a position to apply for a construction permit to establish the stations. In due time these permits were granted and we installed the stations. After complete equipment tests were made, applications for licenses were filed. The licenses to operate the equipment in accordance with service were duly issued.

You must have a government license before you can go on the air with your transmitter, although receiving and auxiliary apparatus does not require a license. Also, each employe appointed to use the equipment must have an operator's license. It is required by law and is issued by the Federal Communications Commission. There is no charge.

Licenses are issued only to citizens of the United States.

An operator's license, radiotelephone, third-class, authorizes the operator to operate any aircraft, portable, or portable-mobile radio station. This type license can be secured by any person willing to give some time to study of elementary theory and the radio laws and regulations of the United States as they apply to radio service. This knowledge is not particularly difficult to acquire, and in our case the regular field personnel has qualified very satisfactorily; in fact many of them through study and the experience they are now securing will be able to secure higher-grade licenses.



Top: *Portable housing (tent) and "Onan" power supply unit, less carrying case. For radio field service*

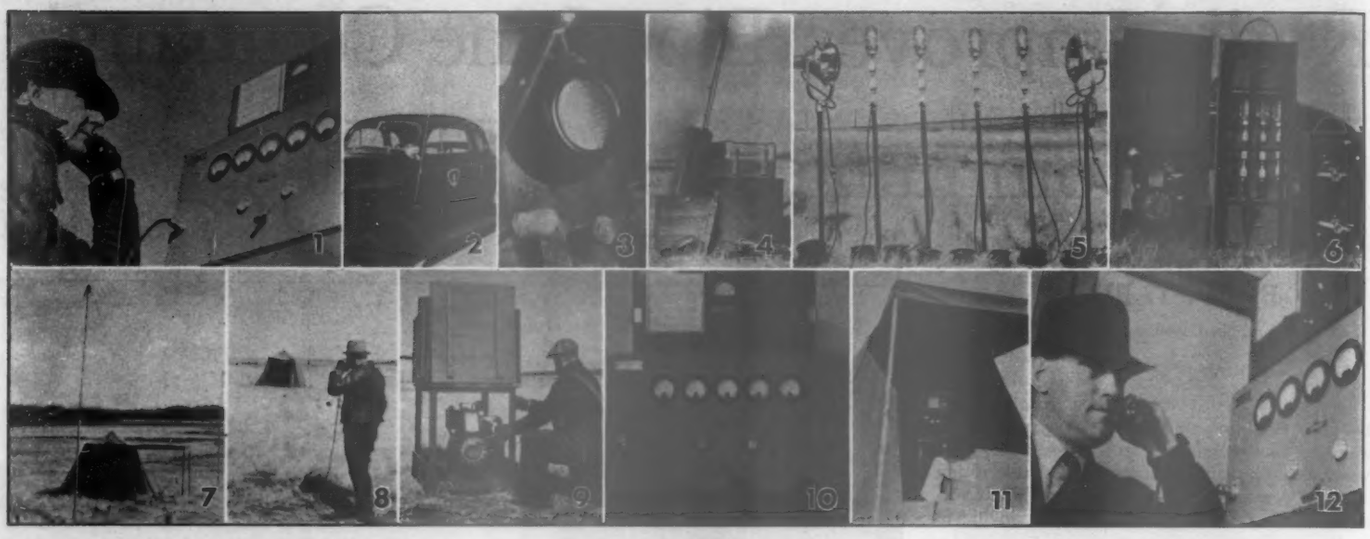
Above: *Two types of radio transmitter and receiver, the one on the left as used in field offices, and the one on the right for field use*

Second-class or higher-grade licensed operators must be used to make any changes in adjustment of the equipment which will affect the frequency of the transmitter.

In our organization we have a limited number of second-class operators who are made available when their services are required in making adjustments where frequency can be affected.

The value of portable-emergency radiotelephone equipment has been fully demonstrated in recent years as a means of communication when normal facilities fail, such as the Ohio valley flood and the New England hurricane, also in providing communication service to points where no other means of communication exist.

A number of possibilities of the setup for radiotelephone service can be utilized. Sleet storms, floods, etc., often wreak such havoc with normal communication that radio is about the only means of maintaining contact until normal facilities can be restored. Under such circumstances these radiotelephone stations will be utilized as relay stations at each pump station. The distance over which the equipment can be operated effectively depends largely on atmosphere and other conditions. We have worked maximum distances of over 200 miles during daylight hours even though the Collins 32MA transmitter has a power output of 50 watts. Summer weather will of course restrict slightly the range of the equipment. The Collins transmitters have functioned reliably through the system.



Following an emergency (pipe-line break or other catastrophe) the sequence of happenings would probably be as follows: (1) Calling company cars; (2) company car; (3) typical auto receiver installation; (4) radiotelephone and lighting equipment ready to load; (5) Emergency field lights; (6) emergency lighting system; (7) portable housing and antenna; (8) remote use of radiotelephone handset; (9) power plant (used for radio or lighting); (10) simple transmitter and receiver; (11) in use in the field; and (12) talking from a field office

In our work when pipe lines sometimes fail due to washouts and similar emergencies, the radiotelephone is used if other means of communication is not available. The fleet of automotive equipment used in handling normal operation and maintenance on the pipe line system is equipped with police-type crystal-controlled automobile receivers in order that they may be called at any time when in transit should an emergency arise.

Sets Housed in Metal Cabinets

Receiving sets embrace several manufacturers, including Hallicrafters, R.M.E., and Motorola, all of which are crystal-controlled or otherwise locked on the single frequency on which we operate.

The transmitter and receiver are each housed in metal cabinets and both operate on 110-volt 60-cycle a.c. current so that ordinary commercial power may be used although a gasoline-driven generator unit of 1,000-watt capacity makes the equipment independent of normal power sources. This generator unit also supplies current for lighting and periodic heating in the portable housing which is an umbrella type tent.

The portable antenna used for field use is a single wire erected on two collapsible bamboo poles which knocks down into a package quickly assembled. A fixed or permanent antenna system is provided at pump sttaions where sets are usually stored.

The ground equipment consists of a roll of wire netting spread on the ground under the antenna and held in position by short ground rods.

The equipment in service has been assembled from a number of manufacturers, and by making a few changes in fabrication and by providing some carrying cases it is arranged as a very workable arrangement which when packed consists of eight packages or cases, any one of which can be handled by two men, and the whole setup can be transported in a small pickup.

SAFETY — Conical Guard Over Power Eccentric

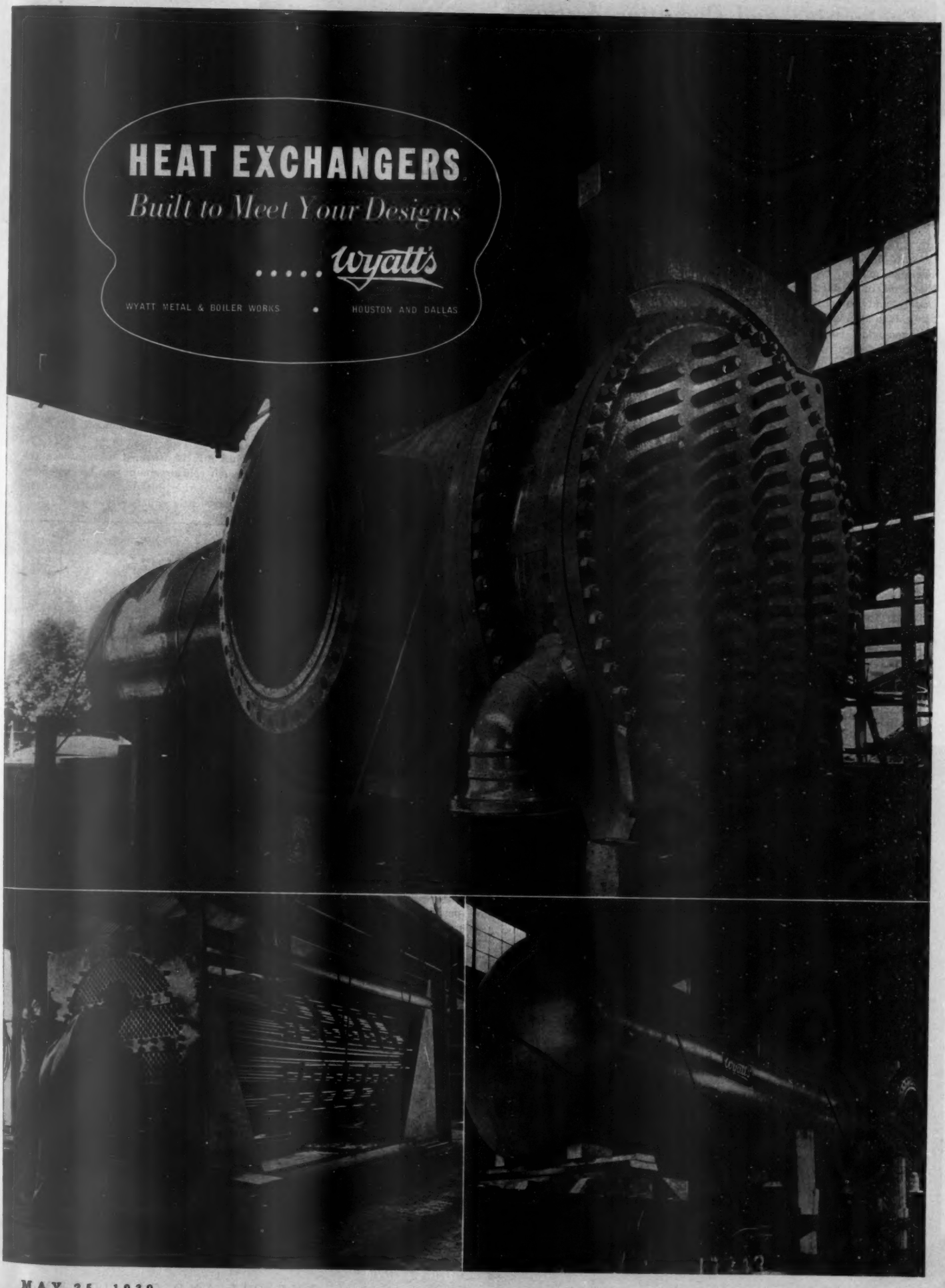
Operating companies within the petroleum industry save thousands of dollars annually by the prevention of accidents to children playing on the leases. They realize that signs, fences and verbal warnings are to little avail when the children are having fun riding on some piece of machinery or climbing over a pile of pipe.

When possible, sources of injury to children are enclosed by fences which prevent entry, many rather harmless pieces of machinery being fenced as carefully as very dangerous high-voltage transmitters. It is impossible, or at least an excessive added operating expense, to enclose some types of machinery; the geared pumping power shown above is an example.

This particular company set a number of powers in a well-populated area and found to their alarm that the rotating eccentrics were being used for merry-go-rounds by the neighboring children. Several minor injuries resulted from the children becoming entangled in the rods. It was impossible to keep a guard at each power to prevent this juvenile "hitch-hiking."

A conical shield with steep sides was mounted over the eccentrics on all powers, the edges extending far enough to cover the pins forming the end bearings of the different rod lines. As the children had no place to sit, they became discouraged and quit playing around the power.

After the shields were in use a short time it was found that they also protected the bearings on the power from rain which diluted and washed away the oil and grease.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Design of Casing Programs

By J. O. HILLS
General Petroleum Corp., Los Angeles, Calif.

By design of casing programs is meant the selection of suitable casing sizes, weights, grades; type of joints; and hole sizes to be used in a particular well to perform most safely and economically the functions of water shutoff and protection at depths predetermined by geological considerations. The term "casing-program design" as herein used is not intended to cover design of casing, but rather covers a method of choosing from available stock the particular casing most suitable for a given well.

Published figures on "setting depths" in the past have encouraged selection of casing by methods which failed to recognize actual conditions and, therefore, failed to assure either safety or economy. At best, these methods apply only to "average" field conditions and simple cases, and are far from correct in many instances. A pressure gradient of ½ lb. per sq. in. per ft. of depth is assumed, and may result in very large errors, because cases have been reported of formation pressures requiring 172 lb. per cu. ft. of mud, or a gradient of 1.19 lb. per sq. in. per ft.[1] In addition to this, implied strength data on both tension and collapse have been generally unreliable and inconsistent. As a result, casing programs often have been chosen with little recognition of actual loading, and with no reliable knowledge of the strength of the pipe. An attempt is made herein to present a method of design which will recognize actual loading conditions and result in design on a proper engineering basis.

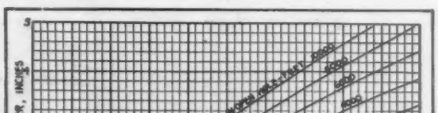

Fig. 1—"Normal" casing clearance in open hole

Size and Clearance

In the design of a casing program the first consideration is the size of pipe to be used, and this determination should start from the size and length of liner to be used. Selection of the liner size controls the size of all other strings, and this has an extremely important bearing on the total casing cost. Large liners have many advantages, and these advantages should be balanced against the comparative costs of alternative programs starting with the different liners.[2]

Having selected tentatively the size and length of liner, the necessary hole size is determined from the required clearance. Fig. 1, entitled "normal casing clearance," gives required clearances for various outside diameters and lengths of pipe in open hole. Fig. 1 is based on data from W. C. Main, of the Youngstown Sheet & Tube Co., and is a simplification of the method advocated by Gignoux.[3] The chart gives reasonable results for the majority of cases, but in special cases more or less clearance may be used—depending upon straightness of hole, mud and general condition, and other factors. This is, of course, a matter of practical judgment and experience.

Having determined the hole size required for setting the liner, the size of the next string of casing is chosen. This will be the smallest casing that safely will pass a bit of an A.P.I. size at least as large as the required hole (see Table 1, Column 5). This procedure is repeated for succeeding strings, although final selection of each must wait until the maximum outside diameter of joint of the previous string has been decided in each case.

***A.P.I.*—Paper presented before mid-year meeting, New Orleans, La., May 15-18.**

Collapse

With the size of the string thus determined, the next problem is collapse; for the weight of the string, and thus its required tensile strength, cannot be determined until the collapse problem has been solved. The casing must be of sufficient strenght to withstand a collapsing pressure equal to the maximum difference between the external pressure due to mud or formation fluid and the minimum internal pressure which may exist at any time during the life of the well.

Normally, the weight of mud used in drilling a well is a correct indication of the formation pressure, and thus can be used to calculate the external pressure on the casing. Occasionally mud much heavier than necessary to balance formation pressures is used, and casing is set in it. It is possible that, in such special cases, the mud around the casing may lose water by filtration until it is no longer fluid and will not transmit pressure vertically—at which time the pressure outside the casing will equal the original formation pressure. Such equalization certainly takes considerable time—perhaps years—and is doubtful in any case. At the other extreme is the case wherein completely impermeable formations or outside casing continues to hold the original mud around the pipe. Ignoring the actual mud weight is, of course, particularly dangerous if a string of pipe is bailed or pumped down to a critical point within a short time after setting. The safest procedure is to use pressures corresponding to the actual mud weight, unless and until actual knowledge is gained of the effective outside pressure on the casing.

Internal pressure will tend to balance external-mud or formation pressure; and if that condition continues for the entire life of the well, a corresponding deduction may be made from the external pressure for design purposes. This condition would apply to water-shutoff strings in which the oil-zone pressure is certain to be maintained or wherein a well is considered too deep to pump to a critical point. Intermediate strings through which another water string is sure to be run ordinarily will have the benefit of internal-mud pressure inside of them, and should never be subjected to differential collapse pressure after the inside string has been set. However, bailing or lost circulation may lower the inside fluid level, and these possibilities must be considered carefully before ignoring the collapse problem. Intermediate strings may be used as water-shutoff strings when lower zones are abandoned, and should be designed to resist collapse if this is a possibility.

Cement commonly is assumed to reinforce the pipe; and if such reinforcement can be depended upon, the length of the pipe up to the top of the cement need have little collapse resistance. However, the point to which cement rises cannot be predicted accurately, and there is no assurance that the cement completely will surround and reinforce the pipe. In addition, it is often cheaper to provide the necessary collapse strength by use of heavier or higher-grade pipe than to provide it by the uncertain method of cementing. For instance, oil-well cement around 9⅝-in. casing in a 13¾-in. hole will cost about 44 cents per lineal foot, and an increase of collapse strength from 3,700 to 5,300 lb. per sq. in. can be bought in Grade N-80 steel at the same cost. Therefore, the better and safer course in design is to consider the cement only as providing additional safety. Casing strings designed to withstand collapse without aid of cement sometimes can have smaller and less expensive cement jobs than are general practice, if geological conditions permit.

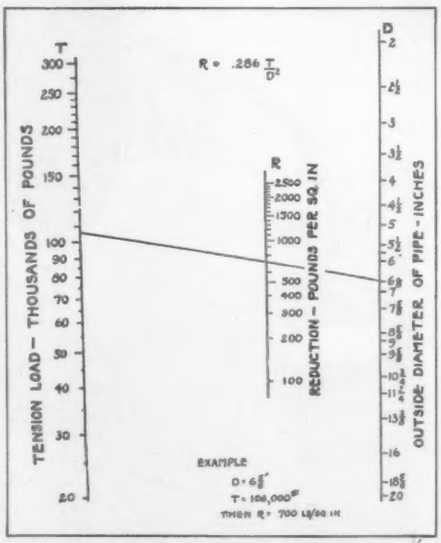

Fig. 2—Reduction of collapse strength due to tension

Having determined the differential-pressure gradient to be used in design, knowing the size of pipe to be run, and having chosen a safety factor, the weight of pipe at the bottom may be

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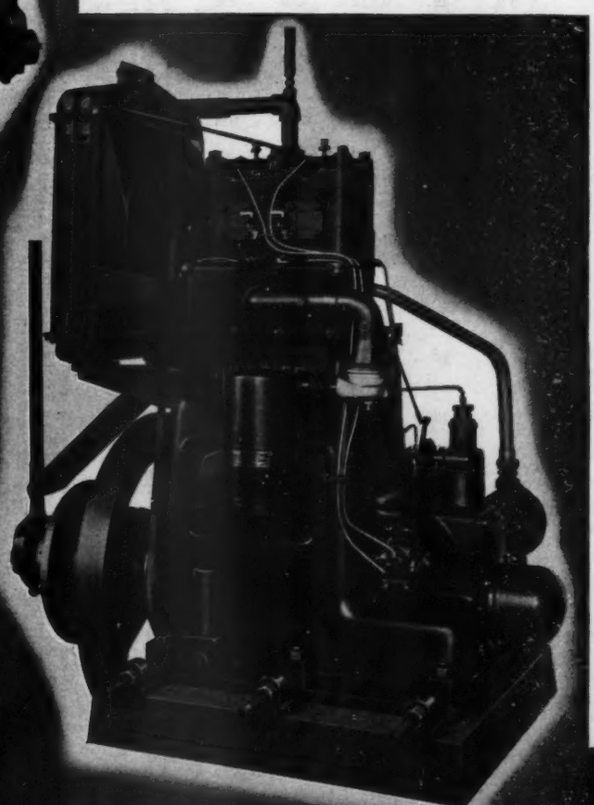

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TABLE 1—DESIGN DATA FOR CASING PROGRAM

Size (in.)	Weight (lb. per ft.)	Thickness (in.)	Inside diameter (in.)	Bit through (in.)	Joint Type*	Joint Inside diameter (in.)	Grade H-40 Collapse† (lb. per sq. in.)	Grade H-40 Tension (thousands of lb.)	Grade H-40 Price per ft.	Grade H-40 Stock	Grade J-55 Collapse† (lb. per sq. in.)	Grade J-55 Tension (thousands of lb.)	Grade J-55 Price per ft.	Grade J-55 Stock	Grade N-80 Collapse† (lb. per sq. in.)	Grade N-80 Tension (thousands of lb.)	Grade N-80 Price per ft.	Grade N-80 Stock
4½	16	0.334	4.08	3⅞	A.P.I.	5.36	4,220	181	...	...	5,500	226	0.911	yes	7,180	320		...
					L.T.C.	5.50	4,220	186	...	...	5,500	256	0.95	yes	7,180	372	1.01	...
					Sp.	5.05	4,220	237	...	...	5,500	296	...	...	7,180	395	...	...
					F.J.	4.75	4,220	145	...	...	5,500	181	0.99	yes	7,180	242	1.11	...
5	15	0.296	4.41	4¼	A.P.I.	5.50	3,350	170	...	...	4,350	212	0.854	yes	5,700	283	...	...
					L.T.C.	5.75	3,350	175	...	...	4,350	241	...	...	5,700	350	0.944	...
					Sp.	5.36	3,350	...	...	...	4,350	...	...	...	5,700	...	...	...
					F.J.	5.00	3,350	134	...	...	4,350	167	0.98	...	5,700	224	1.06	...
	18	0.362	4.28	3⅞	A.P.I.	5.50	4,380	206	...	...	5,860	258	1.02	...	7,410	344	...	...
					L.T.C.	5.75	4,380	212	...	...	5,680	292	...	...	7,410	424	1.12	...
					Sp.	5.36	4,380	292	...	...	5,860	365	...	...	7,410	487	...	...
					F.J.	5.00	4,380	171	...	...	5,860	214	1.14	...	7,410	285	1.23	...
	21	0.423	4.15	3⅞	A.P.I.	5.50	5,000	237	...	...	6,550	296	1.18	...	8,550	395	...	...
					L.T.C.	5.75	5,000	244	...	...	6,550	336	...	...	8,550	488	1.30	...
					Sp.	5.36	5,000	311	...	...	6,550	389	...	...	8,550	518	...	...
					F.J.	5.00	5,000	201	...	...	6,550	251	1.24	yes	8,550	335	1.39	...
5½	14	0.244	5.01	4¼	A.P.I.	6.05	2,120	152	0.718	...	2,740	190	0.773	...	3,580	253	...	...
					L.T.C.	6.05	2,120	161	...	...	2,740	222	...	...	3,580	322	...	...
					Sp.	5.83	2,120	...	...	...	2,740	...	...	...	3,580	...	...	...
					F.J.	5.50	2,120	...	...	...	2,740	...	0.92	...	3,580	...	...	...
	15	0.262	4.98	4¼	A.P.I.	6.05	2,400	163	0.758	...	3,100	204	0.817	...	4,050	272	...	...
					L.T.C.	6.05	2,400	173	...	...	3,100	238	...	...	4,050	346	...	...
					Sp.	5.83	2,400	...	...	...	3,100	...	...	...	4,050	...	...	...
					F.J.	5.50	2,400	...	...	...	3,100	...	0.97	...	4,050	...	...	...
	17	0.304	4.89	4¼	A.P.I.	6.05	3,000	187	0.860	...	3,900	234	0.927	yes	5,100	312	...	...
					L.T.C.	6.05	3,000	199	...	...	3,900	274	...	...	5,100	398	...	...
					Sp.	5.83	3,000	272	...	...	3,900	340	1.00	...	5,100	454	1.15	...
					F.J.	5.50	3,000	155	...	...	3,900	194	1.07	...	5,100	258	...	...
	20	0.361	4.78	4¼	A.P.I.	6.05	3,850	220	...	...	5,000	275	...	...	6,550	367	...	...
					L.T.C.	6.05	3,850	233	...	...	5,000	320	...	...	6,550	466	1.24	...
					Sp.	5.83	3,850	298	...	...	5,000	372	1.20	yes	6,550	497	1.32	...
					F.J.	5.50	3,850	189	...	...	5,000	236	...	...	6,550	315	1.36	...
5¾	14	0.230	5.29	4¾	A.P.I.	6.56	1,750	150	...	...	2,300	188	0.825	...	2,800	250	...	...
					L.T.C.	6.65	1,750	160	...	...	2,300	220	...	...	2,800	320	...	...
					Sp.	6.09	1,750	...	...	...	2,300	...	0.98	...	2,800	...	...	...
					F.J.	5.75	1,750	...	...	...	2,300	...	...	...	2,800	...	...	...
	17	0.280	5.19	4¾	A.P.I.	6.56	2,500	182	...	...	3,250	228	0.977	...	4,200	304	...	...
					L.T.C.	6.65	2,500	192	...	...	3,250	264	1.02	...	4,200	384	...	...
					Sp.	6.09	2,500	288	...	...	3,250	360	...	...	4,200	480	...	...
					F.J.	5.75	2,500	...	...	...	3,250	...	1.11	...	4,200	...	...	...
	19.5	0.330	5.09	4¾	A.P.I.	6.56	3,150	212	...	...	4,100	265	1.13	...	5,400	354	...	...
					L.T.C.	6.65	3,150	225	...	...	4,100	310	1.17	...	5,400	450	...	...
					Sp.	6.09	3,150	312	...	...	4,100	390	1.22	...	5,400	520	1.34	...
					F.J.	5.75	3,150	178	...	...	4,100	223	1.26	...	5,400	297	...	...
	22.5	0.380	4.99	4¾	A.P.I.	6.56	3,900	242	...	...	5,050	302	1.28	yes	6,600	403	...	...
					L.T.C.	6.65	3,900	257	...	...	5,050	353	1.34	...	6,600	514	1.42	...
					Sp.	6.09	3,900	327	...	...	5,050	409	1.38	yes	6,600	545	1.51	...
					F.J.	5.75	3,900	208	...	...	5,050	260	1.34	yes	6,600	347	1.52	...
6⅝	20	0.288	6.05	5⅝	A.P.I.	7.39	2,050	206	...	...	2,650	258	1.14	...	3,500	343	...	...
					L.T.C.	7.39	2,050	230	...	...	2,650	316	1.19	...	3,500	460	1.26	...
					Sp.	7.00	2,050	...	...	...	2,650	...	...	...	3,500	...	...	...
					F.J.	6.63	2,050	...	...	...	2,650	...	1.29	...	3,500	...	1.39	...
	22	0.318	5.99	5⅝	A.P.I.	7.39	2,400	227	...	...	3,100	284	...	...	4,100	378	1.39	...
					L.T.C.	7.39	2,400	252	...	...	3,100	346	...	...	4,100	505	1.39	...
					Sp.	7.00	2,400	...	...	...	3,100	...	...	...	4,100	...	...	...
					F.J.	6.63	2,400	...	...	...	3,100	...	...	...	4,100	...	1.51	...
	24	0.352	5.92	5⅝	A.P.I.	7.39	2,800	250	...	...	3,700	312	1.36	yes	4,800	417	1.51	...
					L.T.C.	7.39	2,800	277	...	...	3,700	381	1.42	...	4,800	554	1.51	...
					Sp.	7.00	2,800	411	...	...	3,700	514	...	...	4,800	685	...	...
					F.J.	6.63	2,800	...	...	...	3,700	...	1.48	...	4,800	...	1.62	...
	26	0.385	5.86	5⅝	A.P.I.	7.39	3,200	272	...	...	4,200	340	1.46	yes	5,500	453	1.62	...
					L.T.C.	7.39	3,200	302	...	...	4,200	415	1.52	yes	5,500	604	1.62	...
					Sp.	7.00	3,200	411	...	...	4,200	514	1.58	yes	5,500	685	1.73	yes
					F.J.	6.63	3,200	245	...	...	4,200	306	1.52	yes	5,500	408	1.72	...
	28	0.417	5.79	5⅝	A.P.I.	7.39	3,600	293	...	...	4,700	366	1.56	...	6,150	489	1.73	...
					L.T.C.	7.39	3,600	326	...	...	4,700	448	1.63	...	6,150	652	1.73	...
					Sp.	7.00	3,600	426	...	...	4,700	533	1.68	...	6,150	710	1.84	...
					F.J.	6.63	3,600	264	...	...	4,700	330	1.66	yes*	6,150	440	1.82	...
6⅝	29	0.432	5.76	5⅝	A.P.I.	7.39	3,800	302	...	...	4,950	378	...	...	6,450	504	1.80	...
					L.T.C.	7.39	3,800	336	...	...	4,950	462	1.77	...	6,450	672	1.80	...
					Sp.	7.00	3,800	429	...	...	4,950	536	1.74	yes	6,450	714	1.92	yes
					F.J.	6.63	3,800	277	...	...	4,950	346	1.73	yes	6,450	461	1.88	...
7	17	0.231	6.54	6⅛	A.P.I.	7.66	1,200	174	0.891	...	1,600	212	0.958	...	1,600	290	...	...
					L.T.C.	7.75	1,200	193	...	...	1,600	264	...	...	1,600	396	...	...
					Sp.	7.37	1,200	...	...	...	1,600	...	...	...	1,600	...	...	...
					F.J.	7.00	1,200	...	...	...	1,600	...	1.12	...	1,600	...	...	...
	20	0.272	6.46	6⅛	A.P.I.	7.66	1,650	203	1.02	...	2,150	254	1.10	...	2,600	338	1.27	...
					L.T.C.	7.75	1,650	230	...	...	2,150	316	1.15	...	2,600	460	1.27	...
					Sp.	7.37	1,650	...	...	...	2,150	...	...	...	2,600	...	...	...
					F.J.	7.00	1,650	...	...	...	2,150	...	1.26	...	2,600	...	1.41	...
	22	0.301	6.40	6⅛	A.P.I.	7.66	2,000	224	1.13	...	2,600	280	1.21	yes	3,400	373	1.40	...
					L.T.C.	7.75	2,000	253	...	...	2,600	348	1.27	...	3,400	506	1.40	...
					Sp.	7.37	2,000	...	...	...	2,600	...	...	...	3,400	...	...	...
					F.J.	7.00	2,000	...	...	...	2,600	...	1.36	...	3,400	...	1.53	...
	24	0.332	6.34	6⅛	A.P.I.	7.66	2,400	246	1.22	yes*	3,100	308	1.31	...	4,050	410	1.52	...
					L.T.C.	7.75	2,400	279	...	...	3,100	384	1.37	...	4,050	558	1.52	...
					Sp.	7.37	2,400	413	...	...	3,100	516	1.44	...	4,050	688	1.65	...
					F.J.	7.00	2,400	...	...	...	3,100	...	1.45	...	4,050	...	1.64	...
	26	0.362	6.28	6⅛	A.P.I.	7.66	2,700	267	1.31	...	3,550	334	1.41	yes	4,600	445	1.63	...
					L.T.C.	7.75	2,700	303	...	...	3,550	417	1.47	...	4,600	606	1.63	...
					Sp.	7.37	2,700	411	...	...	3,550	514	1.54	...	4,600	686	1.76	...
					F.J.	7.00	2,700	245	...	...	3,550	306	1.54	...	4,600	408	1.74	...
	28	0.393	6.21	6⅛	A.P.I.	7.66	3,050	288	1.39	...	4,000	360	1.50	...	5,200	480	1.74	...
					L.T.C.	7.75	3,050	326	...	...	4,000	448	1.57	...	5,200	652	1.74	...
					Sp.	7.37	3,050	443	...	...	4,000	554	1.64	...	5,200	739	1.87	...
					F.J.	7.00	3,050	269	...	...	4,000	336	1.62	...	5,200	449	1.84	...
	30	0.423	6.15	6⅛	A.P.I.	7.66	3,400	309	...	...	4,450	386	1.68	yes	5,800	515	1.86	...
					L.T.C.	7.75	3,400	350	...	...	4,450	481	1.75	yes	5,800	700	1.86	...
					Sp.	7.37	3,400	447	...	...	4,450	559	1.81	yes	5,800	745	1.99	yes
					F.J.	7.00	3,400	288	...	...	4,450	360	1.73	yes	5,800	480	1.95	...
	40	0.582	5.84	5⅝	A.P.I.	7.66	4,950	415	...	...	6,450	520	2.24	...	8,400	692	2.48	...
					L.T.C.	7.75	4,950	470	...	...	6,450	646	2.33	...	8,400	940	2.48	...
					Sp.	7.37	4,950	...	...	...	6,450	...	...	...	8,400	...	...	...
					F.J.	7.00	4,950	401	...	...	6,450	501	2.30	yes	8,400	669	2.51	...
7⅝	26.4	0.328	6.97	6¾	A.P.I.	8.50	2,000	256	...	...	2,600	320	1.57	...	3,400	427	1.74	...
					L.T.C.	8.50	2,000	301	...	...	2,600	414	1.64	...	3,400	602	1.74	...
					Sp.	8.02	2,000	450	...	...	2,600	562	...	...	3,400	750	...	...
					F.J.	7.63	2,000	...	...	...	2,600	...	1.70	...	3,400	...	1.86	...
	29.7	0.375	6.88	6¾	A.P.I.	8.50	2,500	290	...	...	3,300	366	1.75	...	4,300	483	1.93	...
					L.T.C.	8.50	2,500	342	...	...	3,300	470	1.82	...	4,300	684	1.93	...
					Sp.	8.02	2,500	469	...	...	3,300	586	1.89	...	4,300	780	2.08	...
					F.J.	7.63	2,500	277	...	...	3,300	346	1.87	...	4,300	462	2.04	...
	33.7	0.430	6.77	6½	A.P.I.	8.50	3,100	330	...	...	4,000	413	1.98	...	5,250	550	2.19	...
					L.T.C.	8.50	3,100	389	...	...	4,000	535	2.06	...	5,250	778	2.19	...
					Sp.	8.02	3,100	496	...	...	4,000	620	2.12	yes	5,250	826	2.33	...
					F.J.	7.63	3,100	321	...	...	4,000	401	2.08	...	5,250	535	2.27	...
8⅝	28	0.304	8.02	7⅝	A.P.I.	9.59	1,350	262	...	...	1,800	328	1.68	yes*	1,900	437	...	...
					L.T.C.	9.70	1,350	318	...	...	1,800	437	...	...	1,900	606	...	...
					Sp.	9.06	1,350	...	...	...	1,800	...	...	...	1,900	...	...	...
					F.J.	8.63	1,350	...	...	...	1,800	...	1.81	...	1,900	...	...	...
	32	0.352	7.92	7⅝	A.P.I.	9.59	1,800	301	1.69	yes	2,350	376	1.81	yes	3,000	501	2.10	...
					L.T.C.	9.70	1,800	366	...	...	2,350	503	1.89	yes	3,000	732	2.10	...
					Sp.	9.06	1,800	550	...	...	2,350	687	...	...	3,000	916	...	...
					F.J.	8.63	1,800	...	...	...	2,350	...	1.95	yes	3,000	...	2.21	...
	36	0.400	7.83	7⅝	A.P.I.	9.59	2,300	341	...	...	3,000	427	2.11	yes	3,900	568	2.33	...
					L.T.C.	9.70	2,300	413	...	...	3,000	568	2.20	yes	3,900	826	2.33	...
					Sp.	9.06	2,300	565	...	...	3,000	706	2.27	yes	3,900	941	2.49	yes
					F.J.	8.63	2,300	328	...	...	3,000	410	2.13	yes	3,900	547	2.42	...

Size (in.)	Weight (lb. per ft.)	Thickness (in.)	Inside diameter (in.)	Bit through (in.)	Joint Type*	Joint Inside diameter (in.)	Grade H-40 Collapse† (lb. per sq. in.)	Grade H-40 Tension (thousands of lb.)	Grade H-40 Price per ft.	Grade H-40 Stock	Grade J-55 Collapse† (lb. per sq. in.)	Grade J-55 Tension (thousands of lb.)	Grade J-55 Price per ft.	Grade J-55 Stock	Grade N-80 Collapse† (lb. per sq. in.)	Grade N-80 Tension (thousands of lb.)	Grade N-80 Price per ft.	Grade N-80 Stock
	38	0.425	7.78	7⅞	A.P.I.	9.59	2,500	361	...	...	3,300	451	2.22	yes	4,300	601	2.45	...
					L.T.C.	9.70	2,500	439	...	...	3,300	604	2.31	yes	4,300	878	2.45	...
					Sp.	9.06	2,500	602	...	...	3,300	752	2.38	yes	4,300	1,004	2.61	yes
					F.J.	8.63	2,500	348	...	...	3,300	435	2.23	yes	4,300	570	2.53	...
	43	0.487	7.65	7½	A.P.I.	9.59	3,100	410	...	...	4,000	513	2.49	...	5,250	684	2.76	...
					L.T.C.	9.70	3,100	497	...	...	4,000	684	2.60	...	5,250	904	2.76	...
					Sp.	9.06	3,100	635	...	...	4,000	794	2.65	...	5,250	1,058	2.92	yes
					F.J.	8.63	3,100	410	...	...	4,000	512	2.57	yes*	5,250	684	2.81	...
	44.7	0.500	7.63	7½	A.P.I.	9.59	3,210	421	...	...	4,200	525	...	...	5,480	720	2.88	...
					L.T.C.	9.70	3,210	510	...	...	4,200	700	...	...	5,480	1,020	2.88	...
					Sp.	9.06	3,210	...	...	...	4,200	...	...	...	5,480	...	...	...
					F.J.	8.63	3,210	...	...	...	4,200	...	...	...	5,480	...	2.92	...
9	34	0.355	8.29	7⅞	A.P.I.	10.01	1,700	318	...	...	2,200	398	2.01	...	2,700	530	...	...
					L.T.C.	10.25	1,700	385	...	...	2,200	520	...	...	2,700	770	...	...
					Sp.	9.43	1,700	578	...	...	2,200	722	...	...	2,700	962	...	...
					F.J.	9.00	1,700	...	...	...	2,200	...	2.14	...	2,700	...	...	...
	38	0.402	8.20	7⅞	A.P.I.	10.01	2,150	358	...	...	2,800	448	2.24	...	3,650	597	2.48	...
					L.T.C.	10.25	2,150	435	...	...	2,800	599	2.34	...	3,650	870	2.48	...
					Sp.	9.43	2,150	610	...	...	2,800	763	...	...	3,650	1,018	...	...
					F.J.	9.00	2,150	345	...	...	2,800	431	2.40	...	3,650	575	2.56	...
	40	0.425	8.15	7⅞	A.P.I.	10.01	2,350	377	...	...	3,050	471	2.35	yes	4,000	629	2.60	...
					L.T.C.	10.25	2,350	458	...	...	3,050	630	2.45	...	4,000	916	2.60	...
					Sp.	9.43	2,350	611	...	...	3,050	764	2.53	...	4,000	1,019	2.78	...
					F.J.	9.00	2,350	371	...	...	3,050	464	2.45	...	4,000	619	2.67	...
	45	0.484	8.03	7⅞	A.P.I.	10.01	2,850	427	...	...	3,750	534	2.64	yes*	4,900	712	2.92	...
					L.T.C.	10.25	2,850	519	...	...	3,750	714	2.75	yes	4,900	1,038	2.92	...
					Sp.	9.43	2,850	662	...	...	3,750	828	2.82	yes	4,900	1,101	3.10	yes
					F.J.	9.00	2,850	435	...	...	3,750	544	2.72	...	4,900	725	2.97	...
	55.2	0.594	7.81	7⅞	A.P.I.	10.01	3,900	517	...	...	5,100	646	...	...	6,600	881	3.49	...
					L.T.C.	10.25	3,900	625	...	...	5,100	860	...	...	6,600	1,250	3.49	...
					Sp.	9.43	3,900	706	...	...	5,100	...	...	...	6,600	...	...	...
					F.J.	9.00	3,900	536	...	...	5,100	670	...	...	6,600	894	3.49	...
9⅝	36	0.352	8.92	8⅝	A.P.I.	10.63	1,500	326	1.93	...	1,900	408	2.08	...	2,200	543	...	...
					L.T.C.	10.63	1,500	410	...	...	1,900	564	...	...	2,200	820	...	...
					Sp.	10.10	1,500	...	...	...	1,900	...	...	...	2,200	...	...	...
					F.J.	9.63	1,500	313	...	...	1,900	392	2.21	...	2,200	523	...	...
	38	....	...	8⅝	A.P.I.	10.63	....	...	...	...	....	...	2.27	...	....	...	2.51	...
					L.T.C.	10.63	....	...	...	...	....	...	2.37	...	....	...	2.51	...
					Sp.	10.10	....	...	...	...	....	...	...	...	....	...	...	...
					F.J.	9.63	....	...	...	...	....	...	2.38	...	....	...	2.60	...
	40	0.395	8.84	8⅝	A.P.I.	10.63	1,850	364	...	...	2,400	455	2.37	...	3,100	606	2.62	...
					L.T.C.	10.63	1,850	458	...	...	2,400	629	2.47	...	3,100	916	2.62	...
					Sp.	10.10	1,850	675	...	...	2,400	844	...	...	3,100	1,126	...	...
					F.J.	9.63	1,850	357	...	...	2,400	446	2.47	...	3,100	595	2.70	...
	43.5	0.435	8.76	8⅝	A.P.I.	10.63	2,200	399	...	...	2,840	500	2.56	yes	3,700	665	2.83	...
					L.T.C.	10.63	2,200	503	...	...	2,840	691	2.67	...	3,700	1,006	2.83	...
					Sp.	10.10	2,200	677	...	...	2,840	846	2.80	...	3,700	1,129	3.08	...
					F.J.	9.63	2,200	408	...	...	2,840	510	2.65	...	3,700	680	2.90	...
9⅝	47.6	0.472	8.68	8⅝	A.P.I.	10.63	2,500	431	...	...	3,250	540	...	...	4,250	719	3.09	...
					L.T.C.	10.63	2,500	543	...	...	3,250	746	2.91	yes	4,250	1,086	3.09	...
					Sp.	10.10	2,500	737	...	...	3,250	921	3.03	yes	4,250	1,229	3.33	yes
					F.J.	9.63	2,500	440	...	...	3,250	550	...	...	4,250	733	3.13	...
	54.2	0.545	8.54	8⅝	A.P.I.	10.63	3,100	494	...	...	4,050	618	...	...	5,300	824	3.53	...
					L.T.C.	10.63	3,100	621	...	...	4,050	855	3.33	yes	5,300	1,242	3.53	...
					Sp.	10.10	3,100	795	...	...	4,050	994	3.43	yes	5,300	1,325	3.77	...
					F.J.	9.63	3,100	522	...	...	4,050	653	...	...	5,300	870	3.54	...
10¾	32.75	0.279	10.19	9⅞	A.P.I.	11.98	700	276	...	...	700	345	...	...	700	460	...	...
					L.T.C.	11.75	700	367	...	...	700	505	...	...	700	734	...	...
					Sp.	11.19	700	...	...	...	700	...	...	...	700	...	...	...
					F.J.	10.75	700	...	...	...	700	...	...	...	700	...	...	...
	40.5	0.350	10.05	9⅞	A.P.I.	11.75	1,150	343	2.15	yes	1,500	430	2.31	yes*	1,500	573	...	...
					L.T.C.	11.75	1,150	457	...	...	1,500	629	...	...	1,500	914	...	...
					Sp.	11.19	1,150	...	...	...	1,500	...	...	...	1,500	...	...	...
					F.J.	10.75	1,150	...	...	...	1,500	...	2.44	...	1,500	...	...	...
	45.5	0.400	9.95	9⅞	A.P.I.	11.75	1,500	390	...	...	2,000	488	2.69	yes*	2,300	650	2.98	...
					L.T.C.	11.75	1,500	520	...	...	2,000	715	2.81	yes	2,300	1,040	2.98	...
					Sp.	11.19	1,500	780	...	...	2,000	975	...	...	2,300	1,302	...	...
					F.J.	10.75	1,500	405	...	...	2,000	506	2.79	...	2,300	675	3.05	...
	51.0	0.450	9.85	9⅞	A.P.I.	11.75	1,900	437	...	...	2,500	546	2.99	...	3,250	729	3.31	...
					L.T.C.	11.75	1,900	583	...	...	2,500	801	3.12	...	3,250	1,166	3.31	...
					Sp.	11.19	1,900	790	...	...	2,500	988	3.27	...	3,250	1,319	3.58	...
					F.J.	10.75	1,900	472	...	...	2,500	590	3.06	...	3,250	787	3.35	...
	54.6	0.483	9.78	9⅞	A.P.I.	11.75	2,200	467	...	...	2,800	583	...	...	3,650	777	3.51	...
					L.T.C.	11.75	2,200	623	...	...	2,800	855	...	...	3,650	1,240	3.51	...
					Sp.	11.19	2,200	807	...	...	2,800	1,010	3.45	...	3,650	1,345	3.79	...
					F.J.	10.75	2,200	...	...	...	2,800	...	...	...	3,650	...	3.54	...
	55.5	0.495	9.76	9⅞	A.P.I.	11.75	2,250	479	...	...	2,900	600	3.24	...	3,800	799	3.59	...
					L.T.C.	11.75	2,250	639	...	...	2,900	879	3.38	...	3,800	1,278	3.59	...
					Sp.	11.19	2,250	815	...	...	2,900	1,020	3.52	...	3,800	1,359	3.86	...
					F.J.	10.75	2,250	525	...	...	2,900	656	3.30	...	3,800	875	3.61	...
11¾	40	....	...	...	A.P.I.	....	....	...	...	...	....	...	2.46	yes*	....	...	...	...
					L.T.C.	....	....	...	...	...	....	...	...	...	....	...	...	...
					F.J.	....	....	...	...	...	....	...	2.60	...	....	...	...	...
	42	0.330	11.09	10⅝	S.J.	12.65	....	...	...	...	....	...	2.62	yes	....	...	...	...
11¾	47	0.375	11.00	10⅝	A.P.I.	12.87	1,100	386	...	...	1,400	483	2.82	...	1,400	643	3.13	...
					L.T.C.	12.87	1,100	536	...	...	1,400	737	2.95	...	1,400	1,072	3.13	...
					S.J.	12.65	...	...	...	...	1,400	...	2.89	...	...	...	...	...
					F.J.	11.75	1,100	...	...	...	1,400	...	2.94	...	1,400	...	3.22	...
	54	0.435	10.88	10⅝	A.P.I.	12.87	1,500	445	...	...	2,000	556	3.20	yes	2,250	742	3.54	...
					L.T.C.	12.87	1,500	620	...	...	2,000	853	3.34	...	2,250	1,240	3.54	...
					S.J.	12.65	....	...	...	...	2,000	...	3.24	yes	....	...	...	...
					F.J.	11.75	1,500	492	...	...	2,000	615	3.29	...	2,250	820	3.60	...
	60	0.489	10.77	10⅝	A.P.I.	12.87	1,900	497	...	...	2,450	622	3.50	yes	3,200	829	3.88	...
					L.T.C.	12.87	1,900	691	...	...	2,450	950	3.65	yes	3,200	1,382	3.88	...
					S.J.	12.65	....	...	...	...	2,450	...	3.51	yes	....	...	...	...
					F.J.	11.75	1,900	570	...	...	2,450	713	3.56	yes	3,200	950	3.90	...
13⅜	48	0.330	12.72	12¼	A.P.I.	14.38	650	357	...	...	650	446	3.21	...	650	595	...	...
					L.T.C.	14.38	650	541	...	...	650	745	...	...	650	1,082	...	...
					S.J.	14.13	...	...	...	...	650	...	3.30	yes	...	...	...	...
					F.J.	13.38	650	...	...	...	650	...	3.34	...	650	...	...	...
	54.5	0.380	12.62	12¼	A.P.I.	14.38	850	410	...	...	1,000	513	3.62	yes*	1,000	684	4.01	...
					L.T.C.	14.38	850	620	...	...	1,000	853	3.78	...	1,000	1,240	4.01	...
					S.J.	14.13	...	...	...	...	1,000	...	3.67	yes	...	...	...	...
					F.J.	13.38	850	...	...	...	1,000	...	3.72	...	1,000	...	4.07	...
	61	0.430	12.52	12¼	A.P.I.	14.38	1,100	461	...	...	1,450	576	4.00	yes*	1,450	769	4.43	...
					L.T.C.	14.38	1,100	699	...	...	1,450	961	4.17	...	1,450	1,398	4.43	...
					S.J.	14.13	....	...	...	...	1,450	...	4.02	yes	....	...	...	...
					F.J.	13.38	1,100	545	...	...	1,450	681	4.06	...	1,450	909	4.45	...
	68	0.480	12.42	12¼	A.P.I.	14.38	1,400	513	...	...	1,850	641	4.40	...	2,050	855	4.88	...
					L.T.C.	14.38	1,400	778	...	...	1,850	1,070	4.60	...	2,050	1,556	4.88	...
					S.J.	14.13	....	...	...	...	1,850	...	4.38	...	....	...	...	...
					F.J.	13.38	1,400	642	...	...	1,850	803	4.44	...	2,050	1,070	4.86	...
	72.5	0.514	12.35	12¼	A.P.I.	14.38	1,600	549	...	...	2,100	686	...	...	2,500	915	5.22	...
					L.T.C.	14.38	1,600	831	...	...	2,100	1,140	...	...	2,500	1,662	5.22	...
					F.J.	13.38	1,600	...	...	...	2,100	...	...	...	2,500	...	5.15	...
	83.5	0.600	12.18	11	A.P.I.	14.38	2,150	635	...	...	2,800	795	...	...	3,700	1,060	...	...
					L.T.C.	14.38	2,150	964	...	...	2,800	1,320	...	...	3,700	1,928	...	...
					F.J.	13.38	2,150	...	...	...	2,800	...	...	...	3,700	...	...	...
16	65	0.375	15.25	14¾	S.J.	16.84	....	...	...	...	550	...	5.11	yes	....	...	...	...
	75	0.437	15.13	14¾	S.J.	16.95	....	...	...	...	900	...	5.71	yes	....	...	...	...
18⅝	78	0.375	17.76	17½	S.J.	19.46	....	...	...	...	340	...	6.51	yes	....	...	...	...
	87.5	0.435	17.88	17½	S.J.	19.58	....	...	...	...	520	...	7.24	yes	....	...	...	...
20	111	0.500	19.0	18⅝	S.J.	21.07	....	...	...	...	660	...	9.68	yes	....	...	...	...
22	123	0.500	21.0	20¾	S.J.	23.07	....	...	...	...	520	...	10.87	yes	....	...	...	...

*A.P.I.—standard threads and couplings (A.P.I. Standards No. 5A, 9th edition, Table 3).
L.T.C.—long threads and couplings (A.P.I. Standards No. 5-A, 9th edition, Table 18).
Sp.—special upset joint with square threads.
F.J.—flush joint with square threads.
S.J.—slip joint.

†These collapse data have not yet been approved oficially by the Institute; they have been referred to the engineers' subcommittee on pipe for discussion at the New Orleans meeting, May 1939.

TABLE 2—CASING PROGRAM

Well "A" .....
Date .....

String—	Total depth (ft.)	Amount (ft.)	Size outside diameter (in.)	Weight per foot (lb.)	Grade	Type of joint	Outside diameter of joint (in.)	Size of bit below (in.)	Clearance Actual (in.)	Clearance Normal (in.)	Safety factors Tension	Safety factors Collapse	Cost (Los Angeles)	
Surface	1,000	1,000	16	65	55	Slip-joint	16.84	13¾	...	3.30	High	1.10 (72-lb.)	.....	$5,100
Intermediate	5,200	5,200	9⅝	40	55	A.P.I.	10.63	8⅝	3.12	2.35	2.19	0.93 (72-lb.)	.....	12,300
Water shut-off	9,800	5,300	6⅝	24	80	L.T.C.*	7.39	....	1.24	1.20	2.15	1.25 (90-lb.)	$8,000	.....
	....	4,500	6⅝	20	80	L.T.C.*	7.39	5⅝	1.24	1.20	High	1.05 (90-lb.)	8,100	16,100
Liner	10,100	300	5	21	55	Flush-joint	5.00	3⅞	0.63	0.55	....	... .	.....	400
														$33,900

*Long-thread-and-coupled.

chosen. In long strings it usually is found economical to use one or, in some cases, two lighter weights or lower grades at the top of the string when collapsing pressures are lower. It is possible to use several weights, but the additional saving usually is not enough to justify the additional complications. Alternative possibilities will appear, and should be analyzed from the standpoint of tensile strength before final decision is made.

When using more than one weight of pipe in a string, the effect of tension on collapse resistance of the upper section must be considered. Fig. 2, developed by W. C. Main from unpublished data furnished by K. V. King, gives the reduction of collapse resistance due to tensile load for any size of pipe. The final tension in the pipe at the critical section may be greater or less than the weight of the pipe below it, depending upon the pull taken at the top when landing. Therefore, the landing procedure should be known, and the correction for tension be made accordingly. The adjustment of the depth of pipe-weight change due to this correction must be made by trial.

Tensile Strength

After choosing the possible alternative weights and grades of pipe for collapse resistance, the choice of weights, grades, and joints for tensile strength must be made. Pipe and joint combinations giving the desired tension safety factors must be combined with the alternatives selected from collapse considerations to give the least expensive total cost consistent with simplicity in numbers of the different sizes, weights, and grades.

Buoyancy of mud reduces the total tensile load; but inasmuch as this is proportionally about the same for most conditions, it can be disregarded except in cases of extremely high mud weights, and will add to the safety factor. Floating pipe into the hole relieves the load on equipment, and also on the pipe; but ordinarily this will not reduce the final dead load on the pipe, because the load reduction due to floating is lost when circulation is started. However, permanently landing the pipe before filling will avoid shock loads while the maximum weight is being carried.

Safety Factors

Using minimum collapse-strength figures and assuming maximum possible pressures as outlined, very low collapse safety factors may be justified. Published "setting-depth" figures always have been based on average collapse strength, and not on minimum expected collapse strength of the pipe; and this practice no doubt often has resulted in extremely low actual collapse safety factors even when the calculated factor was reasonably high.[4] Detrimental conditions in crooked holes, and corrosion lead to preference for heavier-walled pipe of a lower grade if the strength is sufficient and the cost is about the same. When corrosion, etc., can be ignored, the collapse safety factor may approach unity and still "get by," especially as there is no shock loading to be considered. Because of the probability that cement will support the pipe at least partly and protect it against corrosion, it is felt that the safety factor may lie between 1 and 1.25 when cement is behind the pipe, but should be kept above the higher figure when cement is not present. A low safety factor at the bottom of a deep hole may be justified further by the improbability of pumping or bailing to bottom.

Cases will occur when no pipe is available, which will give a safety factor above 1 on the basis outlined above. Although such a safety factor should be avoided, it does not mean necessarily that collapse is certain to occur; as pipe is generally stronger than the minimum used for calculation, and loading conditions may be less severe than assumed. However, the fact that such cases do occur shows that stronger pipe is needed safely to meet the casing problems for deep wells and severe conditions.

For many short strings collapse resistance is not important, and the primary consideration is insurance against damage by the drill stem. The

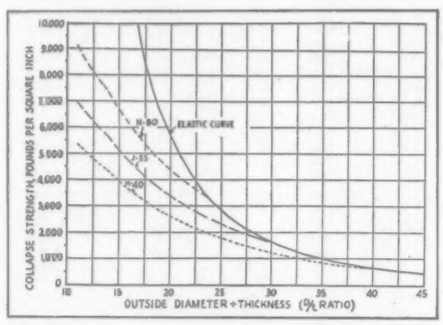

Fig. 3—Minimum collapse strength—A.P.I. Grades 40, 55 and 80

strength and thickness necessary in these cases are matters of judgment based upon experience, and no rule can be laid down. Wall thickness may be a guiding factor.

In tension, the proper safety factor is harder to select. While running pipe into the hole the maximum weight is known, and both buoyancy and friction tend to relieve the dead load. However, it is frequently necessary to pull on the pipe enough to overcome considerable friction, and there may be rather severe shock loads. Pull on the pipe ordinarily is more dependent upon the strength of the hoisting equipment, and upon the judgment of those in charge, than on the strength or weight of the pipe. In addition, there is still considerable doubt as to the actual joint strength; therefore, a safety factor of at least 2 is necessary. The lower safety factors sometimes necessary with long heavy strings are offset partly by the greater care exercised in handling such heavy loads.

Reference Data

All the information needed in the design of casing programs has not been found previously in any one place, and reference to several sources of information has been necessary. Table 1 gives necessary design data for all A.P.I. sizes, weights, and grades, as well as some additional sizes and weights. No credit nor responsibility is assumed for any data therein, although those shown are believed to be the most reliable available at the moment. Much revision will be necessary as more accurate figures are obtained, but the form of tabulation should continue useful.

Collapse data* are obtained from the minimum-collapse-strength curves for the new casing grades tentatively submitted by the manufacturers to the Institute for adoption (Fig. 3) (originally dated December 29, 1938). They are understood to represent the minimum collapse strength possible with the worst combination of dimensions and material allowable under A.P.I. standards. Tensile-strength figures were computed from minimum-strength specifications on material proposed for the various grades at the 1938 annual meeting and from joint efficiencies furnished by W. C. Main. They are believed to be conservative and more consistent than previously published figures. No differentiation is made between round and V-threads, as the information that is available on their relative strengths indicates that they are substantially equal.† Casing with joints listed as "special" is externally-upset, and strength is computed from manufacturers' claimed joint efficiencies which range from 85 to 100 per cent. Price and stock lists are illustrative only, and in any case can apply only to one location. Pipe listed as "stock" is intended to include pipe which can be obtained without special mill order.

This information, together with the clearance- and tension-correction charts (Figs. 1 and 2) and the casing-program design form are all that is necessary completely to design a casing program from the data on the well to be cased.

Illustration of Design

Well Data

Total depth, ft.	10,100
Water shutoff, ft.	9,800
Intermediate protection-string depth, ft.	5,200
Surface pipe, ft.	1,000
Mud weights, lb.:	
To 7,000 ft.	72
From 7,000 to 9,800 ft.	90
Liner size (flush joint), in.	5
Hole conditions	Normal

For this size liner and length of open hole, a bit size of 5⅝ in. is required (see "clearance chart," Fig. 1) which, in turn, requires 6⅝-in. casing for the 9,800-ft. water-shutoff string (see Table 1). This will be designed for an external pressure due to 90-lb. per cu. ft. mud, and no internal pressure will be relied upon. The form shown in Fig. 4 is a graphical aid to design, and a form of presenting results. Two pressure-depth curves are drawn on the form as shown—one corresponding to the pressure gradient of 90-lb. mud, and the other giving pressures 1.25 as great. This second line shows the required pipe-collapse strength at any depth for a safety factor of 1.25. Any pressure-depth curve at any safety factor decided upon by the designer may be drawn similarly. A horizontal line at the water-shutoff depth of 9,800 ft. then is drawn, and pipe-collapse strengths are plotted as vertical lines from the pressure scale at the bottom. In the present case the strongest available 6⅝-in. pipe which will give a safety factor of only 1.05, at the bottom, must be used. This illustrates the need for stronger casing.

With the weight and grade chosen for the bottom of the string, weight lines are drawn as shown, and

*These data have not yet been approved officially by the Institute; they have been referred to the engineers' subcommittee on pipe for discussion at the New Orleans meeting (see Table 1 and Fig. 3).

†P. A. Mills, "Report of Pittsburgh Tests," presented Chicago meeting, Nov. 1937; Production Bull. 220, 100-170. Also J. Jay Dunn, "1938 Pipe-Test Program," presented at Chicago meeting, Nov. 1938, Production Bull. 222, 186-96.

these give the tension in the pipe at any depth, read on the weight scale at the top. It is assumed in this case that tension in the pipe when landed will be equal to the weight in mud, and tension corrections for upper sections of the string are made using the "weight in tension in mud" line in conjunction with the tension-correction chart (Fig. 2).

Various alternatives of weights and grades were considered, but only those finally chosen are plotted in the illustration. This shows 24-lb. Grade N-80 long-threaded-and-coupled (L.T.C.) pipe for the top 5,300 ft., and 29-lb. Grade N-80 L.T.C. for the bottom section. It is seen that the collapse safety

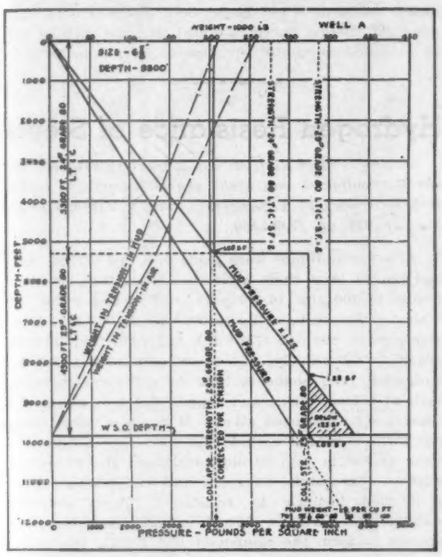

Fig. 4—Casing-program design

factor at the point of weight change is 1.25, and that this factor is below 1.25 from 8,300 ft. to bottom. A comparison of the plotted tensile strengths (safety factor of 2.0) with the completed weight curves shows that tensile safety factors are greater than 2.0.

Starting with the coupling outside diameter of the 6⅝-in. string just decided upon, the next string is chosen from the required clearance as before. This is a protection string only; and presuming that it will never have the inside mud-fluid level lowered, collapse strength is not required; therefore, 9⅝-in. 40-lb. Grade U-55 casing, with short couplings, is selected. The collapse safety factor is calculated for reference, and is on the basis of the 72-lb. per cu. ft. mud in which it is to be run. Wall thickness is 0.395 in., which is considered adequate in this case. A similar procedure for the surface string results in the choice of 16-in. 65-lb. casing.

Complete data on the chosen program are presented in Table 2, and alternative programs are compared readily when presented in this form.

Conclusion

Design of casing programs by the methods outlined herein has proven worth while in obtaining more uniformly safe casing programs at considerably less cost than could be done by the old arbitrary methods of selection. Although knowledge of both actual hole conditions and pipe-strength data is incomplete and sometimes inconsistent, the methods used facilitate taking advantage of additional knowledge as it is gained. Experience and practical judgment necessarily play an important part, and may be correlated by the methods outlined.

For years pipe-strength data have been controversial and unreliable. As this situation is corrected, these data should be in the form of guaranteed minimums so that the designer can depend upon the strength being at least as great as represented. Use of such low safety factors as are necessary in casing program makes such assurance especially important.

Reliable data on pipe strength will be most useful only when applied in connection with reliable knowledge of the specific conditions under which each string is to be used.

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ROTARY DRILL PIPE

(Continued from Page 51)

once with either a fine file or a hone. If there is any doubt about the joint having a fluid seal, it should be laid down and refaced. Continued running of the joint with damaged threads, and mating it with other joints with good threads, will result in destroying or weakening all of the joints with which it is mated.

The use of soft rope as a gasket, or the regular soft metal gaskets, is only a temporary expedient, and when joints begin to leak (indicated by an absence of thread lubricant when the joint is broken out) the string should be refaced. Most fields have machine shops where this work can be done, and several machine companies have portable equipment that can reface the pipe on the location. Many joints may be reclaimed in this manner.

A worn kelly sub can cause extensive damage to a string of pipe as it comes in contact with each joint as it is added to the string. Any thread deformation in the sub may start a similar trouble in the joints. Most contractors keep two subs, one on the kelly and one on the derrick floor, and whenever the one in use becomes worn (indicated by a lack of lubricant or only a few turns to make up or break out) it should be replaced.

While making and breaking of the joints causes some wear, it probably causes less damage than failure to break the joints throughout the duration of the well. Many contractors insist that the thribbles be broken in a different place each trip, with the driller noting on his report "out on single," "out on double," etc. The bottom connections, including the drill collars, reamers and stabilizers are broken on alternate trips or every 24 hours. At times contractors allow their drilling crews to become a little lax in this matter, with the result that trips are made with as little work as possible. When it comes time to break down the pipe preparatory to running casing, some of the joints will be almost impossible to break because they have been screwed together since the pipe was put in the hole. Examination of the threads generally reveals that they have suffered as a result of this neglect.

Many fishing jobs are averted by keeping close check on the drilling fluid gage as a leak in the pipe of any importance will be reflected in a drop in the pressure. Testing of the pipe while coming out of the hole will locate the leak. Periodic testing is a good idea as leaks that are just starting in the tool joint to pipe connection can be found in this manner.

An effective test is to keep the hole full of mud while withdrawing the pipe as it will be "wet" (full of mud) when it comes through the rotary table; any hole will be apparent as fluid will squirt from it. If the viscosity of the fluid is not great enough to hold the mud in the pipe, elevating the pump suction instead of lowering it just before coming out of the hole will make the fluid column on the outside of the drill pipe heavier than that on the inside.

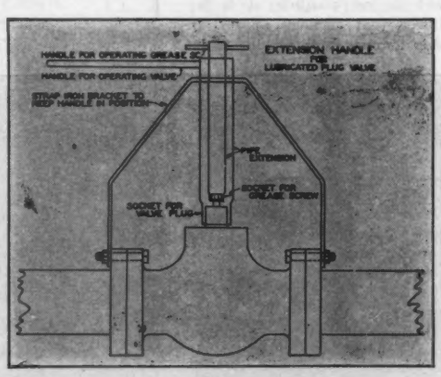
Some contractors test their drill pipe occasionally while it is on the rack by hydraulic pressure. A swedge from the tool joint connection to 2-in. pipe and a plug for the other end of the drill pipe are required. Clear water can be pumped into the joint by any high-pressure pump and the pipe tested to its original capacity. Any joints showing evidence of leakage can be discarded or further inspected and repaired.

Several machines for the testing of the wall thickness and the inspection of the inside of the pipe have recently been introduced. One of these is a long tube with a series of mirrors and a light which will locate any visible defects such as thread washes, washing, wrinkling, mill defects, cracks in the upset or body of the pipe, seams, overlaps, pits, corrosion or internal cutter marks.

Deep drilling requires that the pipe used be of the best quality and that it be kept in good condition as it is imperative to eliminate as many fishing jobs as possible. Many contractors have found that pipe unsuitable for deep fields can still be used in shallow fields with little risk. This practice has led to an increase in the footage obtained from drill pipe with a consequent reduction in the drilling contractor's costs.

Considerable damage to the tool joint threads may occur while the pipe is being moved. A good practice is to clean each pin and box immediately before installing of the joint of pipe in the drilling string. Kerosene is effective in removing the dry grease and dirt; the threads should be wiped as dry as possible and a suitable pipe lubricant used. It is always advisable to look through joints of pipe that have been laying on the ground, as rodents and rabbits often make their nests in such places. If such obstructions are not removed they will cause a plugged bit with the result that a wet string of pipe will have to be pulled.

N.G.A.A. PRIZE AWARD KINK


HANDLE FOR OPERATING GREASE GU
HANDLE FOR OPERATING VALVE
STRAP IRON BRACKET TO KEEP HANDLE IN POSITION
EXTENSION HANDLE FOR LUBRICATED PLUG VALVE
PIPE EXTENSION
SOCKET FOR GREASE SCREW
SOCKET FOR VALVE PLUG

Extension Handle for a Lubricated Plug Valve

FIFTH PRIZE, CLASS D

D. G. THOES, plant superintendent
Cities Service Oil Co., Wichita, Kans.

Outlet valves on the raw storage tanks were located in a pit in front of the tanks. To save the operators from going into this pit which might be filled with gas we contrived the extension handles as shown in the attached sketch. Scrap material and a little time with a welding torch is all that is required to construct these handles.

Progress in METALS

By W. L. NELSON

Descaling and Drying of Steel

A new method of descaling iron and steel and of cleaning and dehydrating structural steel is being offered by the Air Reduction Sales Co. The operation consists of heating the scaled surface rapidly by means of a special oxy-acetylene flame. The scale has a different coefficient of expansion from the main body of material, and hence it is loosened from the surface. The force with which the scale breaks from the surface is sufficient to dislodge the scale completely so that it is thrown as loose flakes from the area undergoing heating. (Fig. 1.)

The usefulness of the process is obvious; it can be used to clean dry structural surfaces for painting or may be used to clean surfaces so that irregularities, such as seams in a billet, may be readily located. In preparation for painting, it is suggested that the surface be cleaned by use of the oxy-acetylene flame, brushed with a wire brush within 15 minutes and painted within two hours and while the steel is still warm. Although examinations of long-exposed painted surfaces which have been applied as recommended above are not as yet possible, it is believed that surfaces applied in this manner will remain intact at least twice as long as the life now being attained by ordinary painted surfaces. In cleaning the surface for painting, it is thought that the removal of tightly adhering scale is not necessary inasmuch as such scale will probably never loosen or spoil the paint job.

Special tips for handling various types and shapes of surfaces have been devised. Fig. 2 shows a special flat tip assembly being used to descale billets by a single pass operation. Other tip assemblies are available for descaling round or curved surfaces, for working into corners or irregular depressions, or for automatically traversing large flat areas. Even an assembly consisting of fine flexible tubes with tips is available, which may be adjusted to many different positions.

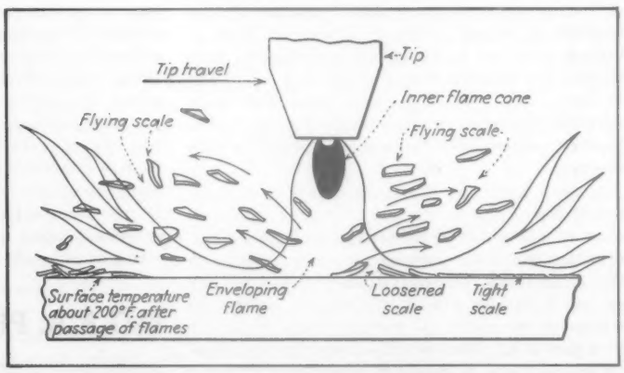


Fig. 1—Scale removal by flame

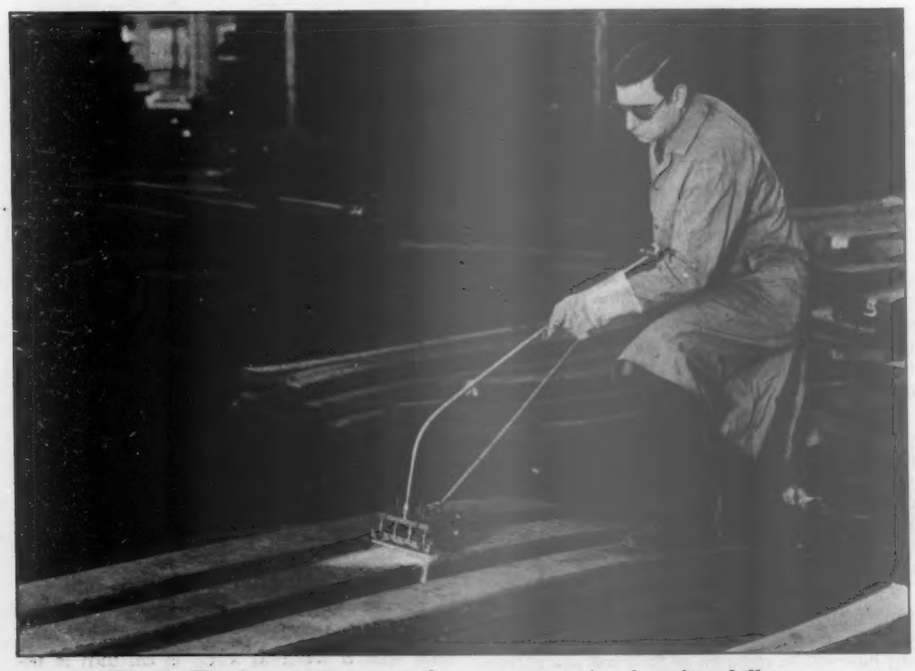


Fig. 2—Flat burner tip mounted on carriage for descaling billets

In comparison with other methods of cleaning, it appears that pickling is much more expensive than flame descaling, and that sand blasting is less expensive. However, pickling does a somewhat better job than flame descaling, and sand blasting involves a large capital investment and is not portable to any extent. Flame descaling has the advantages of being quickly and easily accomplished without elaborate equipment, skilled welders can master the technique of operation with ease, the method can be applied to large or small objects, and can be applied in the field as well as the shop if necessary. Details of the operation and a discussion of the scales that are formed on steels by oxidation are given by Magrath in the Iron Age of April 20, 1939. Certain of the low-alloy steels, notably the nickel steels, have not as yet been descaled with complete satisfaction but it is hoped that the method can be extended to handle any type of ferrous material.

Hydrogen Resistance of Steels

Abstract—(Der Einfluss von Legierungszusatzen auf die Bestandigkeit von Stahl gegen Wasserstoff unter Hohem Druck), F. K. Neumann, Stahl u. Eisen, Vol. 58, Nov. 3, 1938, pp. 1239-1250.

Alloying additions were made to a low carbon steel and tensile tests made at room temperature after exposure to 300 atm. (4,410 p.p.s.i.) of hydrogen for 100 hours at temperatures up to 600° C. (1,102° F.). After exposure at 400° C. (752° F.), the reduction in area began to fall rapidly, due to intergranular attack by hydrogen. The elements that do not form carbides, such as silicon, nickel and copper, did not change the resistance to hydrogen attack. Manganese, which does not form a special carbide but goes into solution to some extent in iron carbide, increased the resistance slightly. Chromium, tungsten and molybdenum gave a decided increase in resistance. These elements stabilize the carbides. When enough chromium was present to form the compound $(Cr, Fe)_4C_3$, the resistance was further increased. Even these steels were slightly decarburized but with little effect in reducing the ductility. The effects of vanadium, titanium, zirconium and columbium were somewhat weaker than tungsten and molybdenum, except when rather high amounts, up to 2 to 3 per cent were present, when they decidedly increased the resistance. This is attributed to the substitution of very stable special carbides for iron carbide.

Translation taken from Metals & Alloys.

Metallurgical Terms

Austenite and Austenitic Steels

Austenite is a solid solution of gamma-iron which is stable only at temperatures above the critical range of the iron carbon system of alloys of which steel is the most common example. Thus, austenite is not possible at room temperatures in plain carbon steels. Austenite can dissolve carbon to the extent of 1.7 per cent.

Austenitic steels contain high percentages of such alloy elements as nickel, chromium, and manganese, which elements produce a material that is similiar to the austenite mentioned above but which is stable at room temperature or can be rendered austenitic by a simple heat treatment, such as quenching.

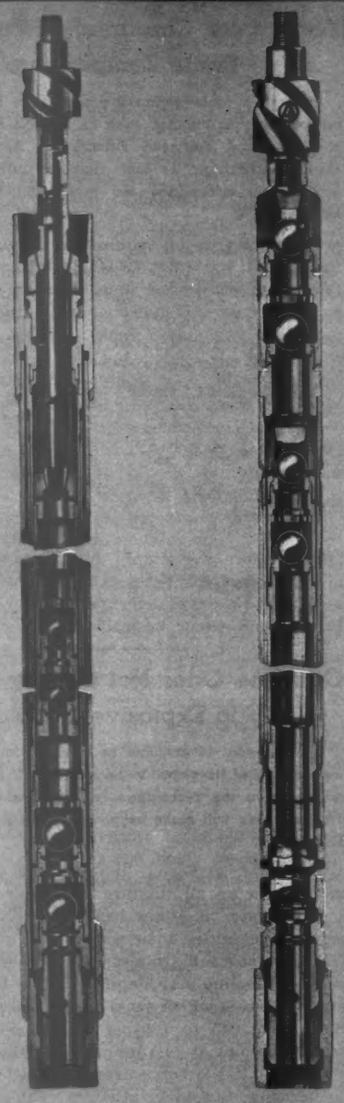
Alloy and Metal

"An alloy is a material having metallic properties and consisting of two or more elements of which at least one is a metal. It is considered by some that the elements must be completely miscible in the liquid state; others apply the term alloy even when liquid miscibility is only partial" (from A.P.I. Code No. 28).

According to this definition, aggregates such as tungsten carbide used for high-speed cutting tools are not true alloys.

Although chemists partially define a metal as a chemical element which possesses the properties of metallic luster, are opaque and are good conductors of heat and electricity, metal fabricators frequently refer to alloys as metals and in such usage they are not limiting the composition of the metallic material (alloy) to a single chemical element.

PLAY AXELSON ANSWERS !



Axelson R.S.L. Stationary Barrel and the R.S.L. Traveling Barrel type Pumps are made by Axelson of steel that laboratory and field tests indicate to be the best for the job. They are finished to exact tolerances by machinists who regard twenty years with Axelson as little more than an apprenticeship. Many other pumps are just made—with one objective in mind—to sell. How well they will operate, how long they will last are forgotten points. Axelson can't forget these points for on them hinges future oil company business—on them hinges a reputation for quality forty-seven years in the making. Axelson products may be imitated but never duplicated.

Easy to Play Here is How...

1. This contest is open to everyone in the United States except Axelson Manufacturing Company employees and members of their families.
2. Each entry must be postmarked by June 15, 1939, and mailed to the Axelson Manufacturing Co., P.O. Box 98, Vernon Station, Los Angeles, Calif.
3. Each entry must be signed and must contain the address of the contestant.

The judges will be appointed by the Axelson Manufacturing Company and their decision shall be final and binding. In case of ties, duplicate awards will be paid to tying contestants.

53 CASH PRIZES!

FIRST PRIZE	$25.00
SECOND PRIZE	15.00
THIRD PRIZE	10.00
50 prizes of	$1.00 EACH

FOR THE BEST ANSWERS

1. The deepest producing oil well in the world is located in the state of_____

2. Colonel E. L. Drake, who drilled America's first oil well, left a substantial fortune to his heirs. True or false_____

3. In the Axelson section of the 1939 Composite Catalog_____different types of deep well plunger pumps are illustrated.

4. Oil is produced in commercial quantities in_____different states of the United States.

5. Consumption of gasoline in the United States reached an all time peak in the year of_____

6. The part number for the Hold Down Adapter of an Axelson Groove Seal 2" x 1½" R.C.D. Pump, Traveling Barrel Type, is_____

7. Next to the United States the country producing the largest amount of oil in 1938 was_____

8. The real name of "Coal Oil Johnny" was_____

9. Axelson No. 55 Sucker Rods are made from nickel-molybdenum alloy steel. True or false_____

10. The gravity on petroleum products is reported at_____degrees Fahrenheit and the observed specific gravity of oil at 75° is _____than its corrected specific gravity.
(greater or less)

11. The East Texas field which was discovered in the year_____now has approximately_____producing wells.
(nearest 1000)

12. The spiral flutes in Axelson Guide Type Paraffin Scraper Couplings are cut in the direction of a right hand thread. True or false_____

13. Dinosaurs made their first appearance on the earth in the Carboniferous era of the Paleozoic age. True or false_____

14. Daily average production per well in 1938 was largest in the state of_____ and smallest in the state of_____

15. The purpose of an "Axelson On-or-Off Attachment" is to enable the operator to _____

16. Last year the third largest producing oil field in the United States was_____ _____

17. The slogan on the Axelson trade mark is "_____"

18. How many different pump combinations can be assembled from Axelson parts? _____

19. The state having the second largest number of producing oil wells is_____

20. Axelson products are distributed in the Mid-Continent by_____

NAME_____

STREET ADDRESS_____

CITY_____ STATE_____

AXELSON

SELLS AND *SERVICES*
OIL WELL PLUNGER PUMPS
AND SUCKER RODS

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Scholarships and Fellowships for Research in Petroleum

Do you have a list of the institutions in which scholarships are available for advanced study in petroleum? What is the usual pay received under such appointments?—D. A.

The American Chemical Society has published a list of more than 450 scholarships, fellowships and grants which are sponsored for industrial research in universities, colleges and other institutions. Those maintained for the investigation of petroleum subjects, as mentioned here, have been selected from this list.

AMERICAN GAS ASSOCIATION, 420 Lexington Avenue, New York City. Fellowships maintained at the association laboratories, Cleveland, Ohio. National Bureau of Standards, Washington, D. C., pipe corrosion. U. S. Bureau of Mines, gas. University of Oklahoma, Norman, Okla., natural gas. University of West Virginia, Morgantown, W. Va., natural gas. Savory Appliance, Inc., Newark, N. J., gas appliances. Surface Combustion Corp., Toledo, Ohio, gas heat in the resistance of metals to corrosion; development of high-temperature gas-hot tubes for heating furnaces.

AMERICAN PETROLEUM INSTITUTE, 50 West Fiftieth Street, New York City. Fellowships at California Institute of Technology, Pasadena, Calif., oil sands. Ohio State University Research Foundation, Columbus, Ohio, pure hydrocarbons. U. S. Geological Survey, Washington, D. C., source sediments. National Bureau of Standards, Washington, D. C., pure hydrocarbons. University of Michigan, Ann Arbor, water-flooding.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, 29 West Thirty-ninth Street, New York City. Research associates at Harvard University and Pennsylvania State College, lubrication.

ASPHALT SHINGLE ROOFING INSTITUTE, 2 West Forty-fifth Street, New York City, asphalt roofing.

ATLANTIC REFINING CO., 3144 Passyunk Avenue, Philadelphia, Pa. Fellowships at American Petroleum Institute, New York. Battell Memorial Institute, Columbus, Ohio; University of Pennsylvania, Philadelphia, Pa., hydrocarbon-air explosions.

COMMERCIAL SOLVENTS CORP., Terra Haute, Ind. Fellowships at Perdue University, Lafayette, Ind.

CONTINENTAL OIL CO., Ponca City, Okla. Fellowship at University of Illinois, Urbana, Ill., lubrication.

ETHYL GASOLINE CORP., Chrysler Building, New York City. Fellowship at Brown University, Providence, R. I., organ-metallic compounds.

KOPPERS CO., Koppers Building, Pittsburgh, Pa. Fellowship at University of Pittsburgh, Pittsburgh, Pa.

MATHIESON ALKALI WORKS, INC., 60 East Forty-second Street, New York City. Fellowship at Perdue University, Lafayette, Ind., aliphatic hydrocarbons.

MELLON INSTITUTE, Pittsburgh, Pa. Several fellowships on petroleum.

MICHIGAN GAS ASSOCIATION, Grand Rapids, Mich. Fellowship at University of Michigan, Ann Arbor, Mich., gas engineering.

SHELL DEVELOPMENT CO., Shell Building, San Francisco, Calif. Fellowships at Stanford University, Palo Alto, Calif., and University of California, Berkeley, Calif., chemistry.

STANDARD OIL CO. OF CALIFORNIA, 225 Bush Street, San Francisco, Calif. Fellowships at California Institute of Technology, Pasadena, Calif., equilibrium relations, vapors and liquids; source sediments, oil-bearing formations. Oregon State College, Corvallis, Ore., heat of combustion. Stanford University, naphthenic and other organic acids; heat capacity of organic vapors; drilling muds. University of California, fluid mechanics; radiant energy interchange; oxidation rates. University of Minnesota, geology. University of Washington, alkyl sulfonates; geology. National Bureau of Standards, thermal properties of liquids.

UNION OIL CO. OF CALIFORNIA, 617 West Seventh Street, Los Angeles, Calif. Fellowships at California Institute of Technology, oiliness. University of Texas, Austin, Tex., nitrogen bases.

UNIVERSAL OIL PRODUCTS CO., Riverside, Ill. Fellowships at Armour Institute of Technology, Chicago. Northwestern University, Evanston, Ill.; University of Chicago; University of Michigan; University of Wisconsin, hydrocarbons.

There are numerous additional fellowships for investigation that may be related to the petroleum industry. These include chemistry, metals, insulation, water and steam.

Applications should be addressed to the place where the fellowship is located. The stipend varies from about $250 to $6,000 per year.

Reference: Callie Hull, Research Supported by Industry Through Scholarships, Fellowships, and Occasional Grants; Ind. Eng. Chem., News Edn., 17, 155, 1939.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

Physical and Chemical Laws and Principles Used in the Petroleum Industry

ABSOLUTE TEMPERATURE

(Volume changes with temperature)

The coefficient of expansion of a gas is 1/273 (0.00367) of its volume for each degree Centigrade change, provided the pressure remains constant at zero° C. When correcting for temperature this fraction is added for observations above zero and subtracted when below.

This means that if a gas were cooled from zero° C. to —273° C. and remained a gas, its volume would be nothing. However, all known gases become solids or liquids before reaching —273° C.

The temperature —273° C. is known as zero on the absolute temperature scale; it is frequently known as "absolute zero." It is equivalent to —459.4° F.

Factors for Changing Viscosities at Same Temperature

Is there a table giving the multipliers for changing one viscosity to another, such as Saybolt Furol, Engler, Redwood and Redwood Admiralty? How much oil should be on hand for each viscosity test? If you can furnish this information the favor will be of much help.—P. T. L.

The volume of oil required to be placed in the instrument, the quantity which is timed and the factors for converting time from one instrument to another, are all indicated in the table.

VISCOSITY FACTORS AT SAME TEMPERATURE

	Volume in cc.		Viscosity factor	
	Required	Timed	Converting to	Multiply by
Saybolt U.	85	60	Furol	0.103
			Redwood Adm.	.084
			Redwood	.848
Furol	85	60	Saybolt U.	10.000
Engler	265	200	Saybolt U.	34.000
Redwood (No. 1)	140	50	Saybolt U.	1.18
			Engler	0.0345
Redwood Admiralty (No. 2)	140	50	Saybolt U.	11.900

The factors give simply the approximate equivalents. When the exact relation is required for a specific oil actual determinations by use of the instruments should be made.

Gasoline Odor Not Closely Related to Explosive Limits

Can the odor of gasoline be detected in air containing enough of its vapor to be explosive? Is there any difference in the percentages of gasoline and fuel oil vapors which will make explosive mixtures with air?—E. S. O.

The lower explosive limit for the quantity of gasoline in an air mixture is 1.4 per cent. The U. S. Bureau of Mines has reported that much smaller quantities than this can be detected by the sense of smell. In a series of experiments the odor of gasoline was identified when breathed in an air mixture which contained only 0.03 per cent. So little as 0.07 to 0.28 per cent caused dizziness after breathing it 14.5 minutes. At the lower explosive limit the concentration is strong enough to be dangerous to breathe for even a few minutes. This was demonstrated by tests in which a mixture containing 1.13 to 2.22 per cent gasoline inhaled by a man for three minutes, so affected him that he was compelled to lean on a table for support. Quantities ranging from 2.2 to 2.6 per cent caused the subject to become dizzy after 10 to 12 breaths.

The quantity of vapors of liquid petroleum products required to produce an explosive mixture with air decreases with increasing molecular weight. It has been stated above that gasoline vapors are explosive when present to the extent of 1.4 per cent. Kerosene, containing heavier hydrocarbons of higher molecular weight, is explosive down to 1.1 per cent, and fuel oil, the heaviest of the liquid products forms an explosive mixture when so little as 0.7 per cent is present.

It is important to know that kerosene is more dangerous in this respect than gasoline. The wetting of kindling with kerosene when starting a fire in a stove is now recognized as extremely hazardous. It has resulted in many explosions and destructive fires.

Mid-Continent Refinery Crude Runs Continue to Rise in May

Estimated daily crude runs to stills in the Mid-Continent area will continue to rise in May, with a total of 533,035 bbls., compared with 523,335 bbls. in April and compared with 527,315 bbls. in May one year ago. All but three of the districts in this area show an increase in daily crude runs.

Oklahoma

Estimated daily crude runs in Oklahoma were reported to be 152,925 bbls., a daily increase of 3,025 bbls. compared with last month. A substantial part of this increase was accounted for by the reopening of the Black Gold refinery at Oklahoma City which has scheduled 2,000 bbls. daily for May. Refineries increasing crude runs were: Johnson Oil & Refining Co., Cleveland, from 4,000 bbls. in April to 5,000 bbls. in May. Rock Island Refining Co., Beckett, from 5,400 bbls. to 6,000 bbls. Reports from the balance of refineries indicate unchanging conditions at most plants.

North Louisiana and Arkansas

Arkansas refineries are second to Oklahoma in increased crude runs with a daily gain of 2,500 bbls. for the month of May. Estimated daily crude runs were 27,900 bbls., compared with 25,400 bbls. in April. Increased activities were reported by the following: Henry H. Cross, Smackover, from 2,500 bbls. in April to 4,000 bbls. in May. Lion Oil Refining Co., El Dorado, from 12,000 bbls. to 13,100 bbls. In the North Louisiana area the Arkansas Fuel Oil Co., Bossier City, and the Atlas Pipe Line Co., Shreveport, increased daily crude runs 1,000 bbls. and 500 bbls., respectively. All other plants reported no change over last month with the exception of the Stanolind refinery at Superior which reduced its daily throughput 500 bbls., making a net gain of 1,000 bbls. daily in crude run to stills during May.

North Central Texas

North Central Texas crude runs advanced 2,125 bbls. daily over April, with 36,110 bbls. to be processed daily scheduled for May. Among those refineries increasing daily crude runs were the Gulf Oil Corp., Fort Worth; the Olney Oil & Refining Co., North Olney, and the Panhandle Refining Co., at Wichita Falls. The balance of refiners are maintaining schedules set in April.

Mid-Continent Crude Runs

Average Daily Barrels

(Advance estimate compiled by The Oil and Gas Journal)

	1937	1938	1939
January	531,535	529,710	503,405
February	541,790	507,985	494,910
March	533,875	491,935	497,180
April	558,385	532,120	523,535
May	572,855	527,315	533,035
June	593,625	540,005	.....
July	605,640	557,520	.....
August	624,475	554,810	.....
September	625,485	555,695	.....
October	619,210	531,325	.....
November	592,170	524,035	.....
December	544,040	503,530	.....

Operations by Refinery Districts

Daily crude runs

	May	Apr.	Incr.
Arkansas	27,900	25,400	2,500
East Texas	43,675	44,075	*400
Kansas	130,575	128,575	2,000
N. Central Texas	36,110	33,985	2,125
North Louisiana	42,700	41,700	1,000
Oklahoma	152,925	149,900	3,025
Southwest Texas	17,300	17,450	*150
W. Texas Panhandle	81,850	82,250	*400
Total	533,035	523,335	9,700

*Decrease.

The Muenster refinery, located at Muenster, is installing a new pipe still and topping unit with an estimated capacity of 1,500 bbls. Work is expected to be completed in June.

Kansas

Estimated daily refinery runs in Kansas are up 2,000 bbls. in May, totaling 130,575 bbls., compared with 128,575 bbls. in April.

East Texas

Estimated daily crude runs in the East Texas area total 43,675 bbls. for May, compared with 44,075 bbls. in April, a decrease of 400 bbls. Several refineries increased activities for the month but were offset slightly by an equal number with lessened activities. The 5,000-bbl. refinery of the former Solvex Refineries, Inc., at Gladewater, is being dismantled and moved to Pana, Ill., where it will be reconstructed together with its 2,000-bbl. Dubbs cracking unit. The former Trinity refinery at Gladewater has also been moved from the field and is now operating in Indiana.

Southwest Texas

Refineries in the Southwest Texas area are maintaining schedules with 17,300 bbls. to be run in May compared with 17,450 bbls. in April. This small reduction was due in part to the Majestic Refining Co. shutting down their Dale plant which had a daily crude run of 100 bbls. in April.

West Texas and Panhandle

The West Texas and Panhandle area report a small decrease compared with the April total of crude runs to stills. Several plants have increased crude runs for May, these being the Panhandle Refining Co., Kings Mill, from 1,200 bbls. to 1,400 bbls.; Phillips Petroleum Co., Borger, from 24,150 bbls. to 25,000 bbls., and the Stamford Refining Co., Stamford, from 400 bbls. to 450 bbls. Other plants have reduced schedules for the month, however, which more than offset the increased crude runs.

Estimated Daily Average Mid-Continent Refinery Crude Runs for May

OKLAHOMA

Company and location—	Daily capacity	Av. dly. runs May	Av. dly. runs Apr.
Anderson-Prichard Ref. Corp., Cyril	7,500	6,500	7,000
Barnsdall Ref. Corp., Barnsdall	5,000	4,000	4,000
Bell Oil & Gas Co., Granfield	5,000	3,000	3,000
Ben Franklin Ref. Co., Ardmore	4,000	3,500	3,300
Black Gold Ref. Co., Oklahoma City	2,500	2,500	(*)
Champlin Ref. Co., Enid	16,000	15,000	15,000
Cities Service Oil Co., Okmulgee	4,000	(*)	(*)
Cities Service Oil Co., Ponca City	12,000	10,000	10,200
Continental Oil Co., Ponca City	28,000	19,500	19,500
Cosco Oil Co., Wynnewood	2,500	(*)	(*)
Cushing Ref. & Gasoline Co., Cushing	4,200	4,000	4,000
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Eason Oil Co., Enid	3,000	(*)	(*)
Johnson Oil Ref. Co., Cleveland	6,000	5,000	4,000
Knox Ref. Co., Covington	300	100	100
Mid-Continent Pet. Corp., West Tulsa	35,000	20,000	20,000
Ohio Oil Co., Bristow	5,000	2,500	2,500
Omar Ref. Co., Garber	5,000	2,500	3,400
Phillips Pet. Co., Okmulgee	6,500	5,325	5,500
Peppers Gasoline Co., Oklahoma City	500	400	400
Pure Oil Co., Muskogee	9,000	(*)	(*)
Rock Island Ref. Co., Beckett	6,500	6,000	5,400
Sinclair Ref. Co., Sand Springs	6,000	4,000	4,000
Sun Oil Co., Yale	5,000	1,800	1,800
Sunray Oil Co., Allen	7,000	4,000	4,000
Texas Co., West Tulsa	16,000	10,000	10,000
Tide Water Oil Co., Drumright	12,000	10,000	9,000
Wilcox Ref. Division, Bristow	5,000	4,800	4,800
Total	229,000	152,925	149,900

*Shut down.

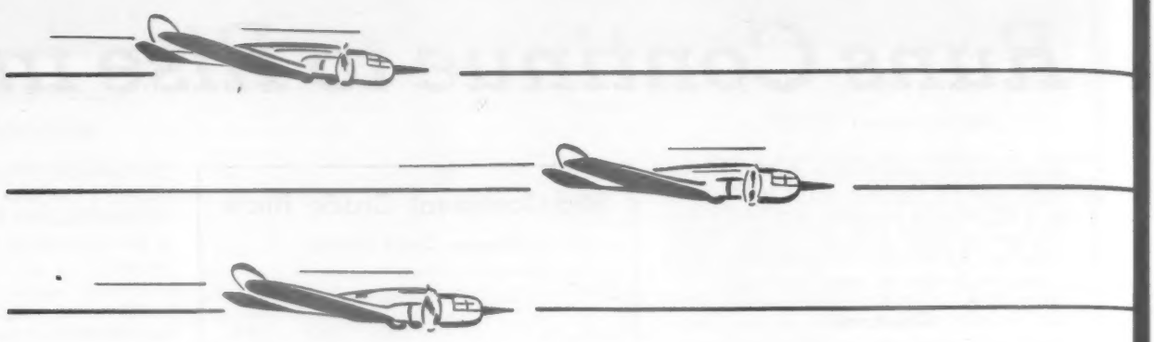
KANSAS

Company and location—	Daily capacity	Av. dly. runs May	Av. dly. runs Apr.
Anco Ref. Co., Garnett	500	425	425
Barnsdall Ref. Co., Wichita	5,000	4,500	5,000
Bay Pet. Co., McPherson	4,000	3,000	3,750
Chanute Ref. Co., Chanute	1,000	1,000	900
Derby Oil Co., Wichita	8,000	7,000	6,000
El Dorado Ref. Co., Eldorado	5,000	4,000	4,000
Falcon Ref. Co., Inc., Great Bend	1,000	800	500
Globe Oil & Ref. Co., McPherson	13,000	14,000	13,500
Kanotex Ref. Co., Arkansas City	12,000	6,500	6,000
National Ref. Co., Coffeyville	8,000	5,000	5,000
Pet. Products Co., Chanute	1,250	1,200	1,200
Phillips Pet. Co., Kansas City	23,000	16,450	17,000
Roper Pet. Co., Parsons	750	500	500
Shallow Water Ref. Co., Scott City	2,500	1,000	1,100
Sinclair Ref. Co., Coffeyville	12,000	8,000	8,000
Sinclair Ref. Co., Argentine	11,000	8,000	8,000
Skelly Oil Co., Eldorado	23,000	20,000	20,000
Socony-Vacuum Oil Co., Inc., Augusta	20,000	17,500	17,000
Standard Oil Co., (Indiana), Neodesha	7,500	7,000	7,000
United Ref. Co., Russell	1,200	700	700
Vickers Pet. Co., Potwin	4,000	4,000	3,000
Total	164,340	130,575	128,575

NORTH LOUISIANA

Company and location—	Daily capacity	Av. dly. runs May	Av. dly. runs Apr.
Arkansas Fuel Oil Co., Bossier City	25,000	21,000	20,000
Atlas Pipe Line Co., Shreveport	12,500	4,500	4,000
Bayou State Oil Corp., Hosston	750	500	500
East Texas Ref. Co., Sandra	7,000	1,700	1,700
Lake-Price Refineries, Inc., Princeton	800	(*)	(*)
Premier Oil Ref. Co. of Texas, Cotton Valley	3,500	3,000	3,000
Rodessa Oil & Ref. Corp., Cedar Grove	12,000	10,000	10,000

(Continued on Page 101)

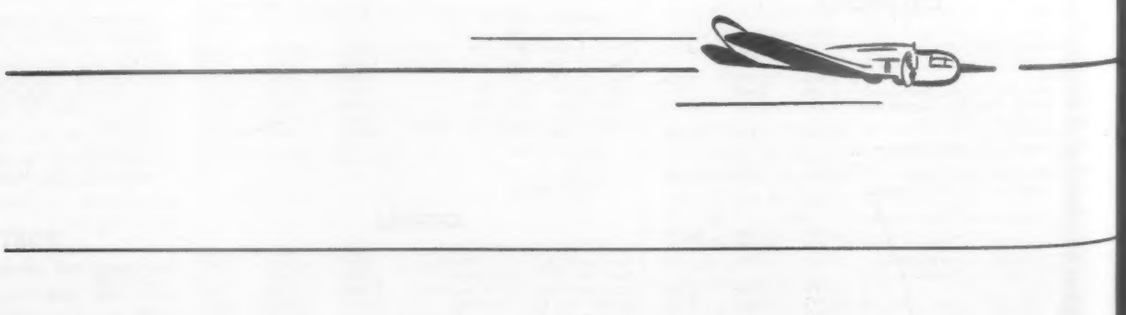


The HOUDRY Process

Houdry CATALYTIC Cracking Units offer the following advantages, among others:

- ★ **Increase in over-all refinery gasoline yields.**
- ★ **Marked increase in octane number.**
- ★ **As high as 82 octane gasoline directly from gas oils or residual stocks.**
- ★ **Aviation bases from gas oils or residual oils with high blending values.**
- ★ **Greater flexibility between gasoline and light fuel oil demands.**
- ★ **Can operate on residuum stocks with low coke yields and high yields of liquid products.**
- ★ **Adaptable for integration into existing refineries where existing thermal equipment can be utilized.**
- ★ **Operating costs less than for similar service with thermal cracking unit.**
- ★ **Proved operability with continuous runs six months and longer.**

The Houdry Process has far-reaching possibilities. Successfully operating units are pointing the way.



FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—A Kiowa County wildcat, estimated good for 2,000 bbl. of oil daily at a total depth of 1,055 ft., was considered "the most important Oklahoma discovery since Ramsey." An oil pool opener in the Cruce gas area, Stephens County, and a small wildcat producer in the Micawber district, Okfuskee County, were completed. Two east edge wells at Ramsey, Payne County, were dry in Wilcox sand.

KANSAS—Kansas production was extended to within 23 miles of the Nebraska line with the opening of a low-gravity oil pool in Norton County. It is the farthest northwest production in the state. A Phillips County wildcat, 29 miles from Nebraska, also was showing as a pool opener, the first for that county. First Arbuckle lime production in Wilson County, southeastern Kansas, was found at a wildcat northwest of Fredonia. Several pools were extended.

TEXAS: Gulf Coast—A Wilcox (Tertiary) test in Montgomery County was dry and abandoned at 7,041 ft. The sand was broken. The second well in the Caplen pool in Galveston County flowed 720 bbl. per day.

Southwest Texas—A new Pettus sand field was opened in Duval County, 8 miles west of San Diego, and another pool is in prospect in Jim Wells County on the Frio-Vicksburg trend. A promising wildcat 10 miles northwest of Alice tested dry after a good showing on a drill-stem test. The White Point pool in San Patricio County appears to have been defined on the northwest by a gas well which gave only a showing of oil.

North Texas—Outposts on four sides of the Nocona pool in Montague County should go far to indicate the size of that recently opened Strawn sand area. The discovery well in Archer County's first Caddo lime pool flowed 111 bbl. in three hours on official gage.

West Texas—Yoakum County is promised a new pool 2 miles northeast of the Bennett pool.

West Central Texas—Throckmorton has a new-pool prospect. The northeast end of the Griffin pool was defined by a dry hole that missed the regular pay.

ARK-LA-TEX—New wells were reported from the Shreveport field, averaging 480 bbl. per well, but new work did not keep up with completions. Wildcats in Caddo and Bossier parishes and Panola County, Texas, are holding the main interest. In coastal Louisiana a new pool is in prospect in St. Charles Parish.

ILLINOIS—Two wells, each good for 4,000 bbl., producing from McClosky lime, were completed in the Salem pool.

MICHIGAN—Seventeen new oil wells produced 21,500 bbl. initially, the largest well of the week, completed in the Redding field in Clare County, starting at 8,760 bbl. in 24 hours, natural flow.

NEW MEXICO—A wildcat in eastern Chaves County, southeastern New Mexico, flowed 12 bbl. of 31-gravity oil an hour after acidizing, opening the first pool in the county. A Lea County wildcat between the Cooper and Lynn pools had natural flow of 450 bbl. of oil in one hour, flowing between casing and drill pipe, later flowing 71 bbl. an hour through ½-in. choke on tubing.

Completions in All Fields

(Week Ending May 20, 1939)

	Oil	Gas	Dry	Total	1939 total comp. to date	1938 total comp. to date
N. Y., Pa., and W. Va.	46	8	3	57	1,164	1,664
Ohio	3	12	4	19	343	337
Indiana	18	10	4	32	73	37
Kentucky	8	1	6	15	230	299
Illinois	63	0	13	76	1,255	366
Michigan	17	3	17	37	464	296
Kansas	15	1	4	20	422	687
Oklahoma	23	1	10	34	675	673
Texas:						
North Central Texas	38	2	31	71	881	1,204
West Texas	30	0	5	35	706	915
Texas Panhandle	3	1	0	4	146	247
East Texas	2	0	0	2	204	901
East Central Texas	0	1	0	1	94	140
East Texas Border	0	1	2	3	27	66
Gulf Coast Texas	28	1	7	36	527	484
Southwest Texas	29	1	12	42	919	821
Total Texas	130	7	57	194	3,504	4,778
North Louisiana	15	3	5	23	205	220
Gulf Coast Louisiana	9	0	7	16	219	187
Total Louisiana	24	3	12	39	424	407
Arkansas	3	0	1	4	89	95
Montana	1	0	0	1	49	26
Wyoming	4	0	1	5	38	63
Colorado	0	0	0	0	3	3
New Mexico	11	0	1	12	229	230
Utah	0	0	0	0	0	0
California	14	0	5	19	364	531
Total United States	380	46	138	564	9,326	10,492
Total previous week	317	42	106	469		
Week ending May 21, 1938	390	24	102	516		

Outstanding Fields—Highlights

(Week Ending May 20, 1939)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	22	53	9	6,368	995	24,148
Wasson-Bennett	18	41	2	1,683	287	10,380
Ector County	8	53	6	10,348	1,689	39,300
Winkler County	3	12	1	609	1,796	34,197
Howard-Glasscock	5	11	4	1,642	1,069	14,298
East Texas	11	22	2	80	25,875	372,348
OKLAHOMA						
St. Louis	8	25	6	1,707	822	37,500
Cement	3	11	1	2,000	256	4,910
KANSAS						
Barton County	3	17	0	0	426	13,670
Ellis County	3	12	4	661	382	10,810
Rice County	5	26	4	1,454	1,312	29,495
Russell County	5	23	4	612	1,231	22,850
NEW MEXICO						
Lea County	7	89	11	3,137	2,118	106,950
LA-ARK-TEX						
Shreveport, La.	2	6	5	2,400	37	6,725
Cotton Valley, La. (deep)	0	7	2	765	127	13,970
Jennings, La.	0	4	0	0	139	25,897
MICHIGAN						
Freeman-Redding	5	28	4	13,230	85	13,662
Van Buren	8	52	8	5,665	219	15,294
ILLINOIS						
Central Illinois	44	361	63	19,612	3,066	206,220
CALIFORNIA						
Wilmington	6	20	2	1,515	631	91,150
KENTUCKY						
Birk City	3	9	2	250	126	2,970

Illinois and Kentucky

By STAFF CORRESPONDENT

McClosky Lime Records Are Broken by Two Salem Wells

MATTOON, Ill., May 22.—Two new wells in the Salem field in Marion County, producing from McClosky lime, are credited with potential productions of 6,600 bbl. and 6,000 bbl. respectively. These are the largest wells completed in Illinois since the development of the basin area began more than two years ago, and they emphasize the possibilities of the McClosky, which appears to lie underneath the Chester series of sands all over the Salem field.

In the past week 63 oil wells and 13 dry holes comprised the record of results in the state. The initial production was 19,612 bbl., but many wells of Marion and Fayette counties were given only short-time production tests on their first day.

Thirty-four new oil wells were completed in the Salem field in Marion County, with a total initial production of 13,102 bbl.; Fayette County had 15 new oil wells, and 3,285 bbl. initial production; Gallatin County, one well, 130 bbl.; Wayne County, two wells, 356 bbl.; Washington County, four wells, 643 bbl.; St. Clair County, one well, 35 bbl.; Clay County, three wells, 1,611 bbl.; Richland County, three wells, 450 bbl. The dry holes completed included Franklin, White and Fayette counties, one each; Jefferson, Wayne, Washington, Clay and Marion counties, two each.

Gallatin County's 130-bbl. completion has attracted much attention to the southeastern part of the state, which is assured considerable exploration this year.

Following are the completions of the past week, the initial production of the oil wells representing 24 hours unless otherwise stated:

Completions in Salem

In the Salem field in Marion County, Texas Co. No. 28, city of Centralia land, SW NW NW Section 9-1n-2e, McClosky lime at 2,043 and 2,057-61 ft., acidized with 3,000 gal., flowed 80 bbl. in 3 hours, rated at 860 bbl. a day. Texas No. 3-B Hawkins Community, NE SE NW Section 8-1n-2e, Benoist 1,818-73 ft., pumped 37 bbl., rated at 259 bbl. a day. Texas No. 13-B Hawkins, NW cor. NE NE NW Section 8-1n-2e, McClosky at 1,960-2,004 ft., flowed 15 bbl. in 3 hours, rated at 105 bbl. a day. Texas No. 12 B. Hawkins, NE NE NW Section 8-1n-2e, McClosky at 1,978-95 ft., flowed 117 bbl. in 3 hours, rated at 819 bbl. Texas No. 6 Fyke, SE cor. NW NW SE Section 8-1n-2e, McClosky at 2,051-80 ft., acidized with 4,000 gal., pumped 36 bbl. in 3 hours, rated at 252 bbl. a day. Texas No. 2 W. B. Carr C, SW cor. NW NE NW Section 8-1n-2e, Aux Vases sand at 1,813-51 ft., flowed 27 bbl. in 3 hours, rated at 189 bbl. a day. Texas No. 9 Richards, SE SE NW Section 5-1n-2e, McClosky at 1,933-56 ft., acidized with 3,000 gal., flowed 125 bbl. in 3 hours, rated at 875 bbl. a day. Texas No. 26 City of Centralia, SE SE NE Section 5-1n-2e, Benoist at 1,778-1,820 ft., pumped 70 bbl. in 3 hours, rated at 490 bbl. a day. Hardman and others No. 1 D. Hess, NE cor. NW NE Section 19-1n-2e, dry and abandoned at 2,356 ft.; Fredonia lime topped at 2,291 ft.

Hensky No. 1 Yoos, NW cor. NE SW Section 6-1n-1e, in the city of Centralia sector, dry and abandoned at 1,305 ft., an old well deepened.

In the north end of the Salem field, Texas Co. No. 2 Winegarner, NW SW SW Section 34-2n-2e, Benoist at 1,903-10 ft., pumped 36 bbl. in 3 hrs., later pumped 252 bbl. in 24 hours. Helmerich & Payne No. 2 Anderson, NE SE SW Section 34-2n-2e, McClosky lime at 2,143-47 ft., acidized with 500 gal. and then with 4,500 gal., pumped 60 bbl. of oil and 10 bbl. of water. Texas Co. No. 9 Easley, SW SE NW Section 33-2n-2e, Benoist at 1,809-90 ft., flowed 74 bbl. in 3 hours, rated at 518 bbl. a day. Ohio Oil Co. No. 10 C. E. Lloyd, SE cor. SW NW NE Section 33-2n-2e, McClosky lime at 2,010-76 ft. at intervals, acidized with 3,000 gal., flowed 175 bbl. in 5 hours. Texas Co. No. 30 City of Centralia, NW SE SW Section 33-2n-2e, Benoist at 1,815-65 ft., flowed 42 bbl. in 3 hours, rated at 294 bbl. per day. Ohio Oil Co. No. 9 Lloyd, SW cor. SE NW NE Section 33-2n-2e, McClosky lime at 2,011-27 ft. and 2,064-71 ft., acidized with 3,000 gal., flowed 113 bbl. in 8 hours. Baldwin No. 3 Holmes, NE SW NE Section 33-2n-2e, Benoist sand at 1,830-70 ft., shot with 20 qt. on bottom, flowed 1,000 bbl. through casing. Texas No. 6 W. Richardson, SE SW NW Section 32-2n-2e, Benoist at 1,650-1,703 ft., flowed 45 bbl. in 3 hours, estimated at 315 bbl. a day. Texas No. 11 Wayman, NE NW NE Section 31-2n-2e, Benoist at 1,726-67 ft., flowed 35 bbl. in 3 hours, rated at 345 bbl. a day. Texas No. 7 Stroup, SE SW NW Section 31-2n-2e, Benoist at 1,808-27 ft., pumped 30 bbl. in 3 hours, rated at 140 bbl. a day. Texas No. 8 N. Lee, NW SW SW Section 28-2n-2e, McClosky lime at 1,938-63 ft., acidized with 3,000 gal., flowed 225 bbl. in 3 hours, rated as a 1,575-bbl. well. Texas No. 9 Chapman, NW SW SW Section 28-2n-2e, McClosky at 1,978-96 ft., flowed 280 bbl. in 3 hours, rated at 1,960 bbl. a day. Haynes and Thomas No. 3 N. Lee, NE SW SW Section 28-2n-2e, McClosky at 1,976-87 ft., acidized with 3,000 gal., flowed 1,600 bbl. in 24 hours. Magnolia Petroleum Co. No. 17 D. A. Shanafelt, SE cor. NW NW NW Section 21-2n-2e, McClosky at 1,984-2,070 ft., acidized with 3,000 gal., flowed 888 bbl. Magnolia No. 16 Shanafelt, C N½ NW NW Section 21-2n-2e, McClosky at 1,970-2,058 ft., acidized with 3,000 gal., flowed 240 bbls. Texas No. 11 N. Young, SE SE NE Section 20-2n-2e, McClosky pay at 1,970 to 2,050 ft., at intervals, acidized with 3,000 gal., flowed 603 bbl. in 3 hours, rated at 4,224 bbl. a day, one of the largest wells ever drilled in the Illinois basin. Shell Oil Co. No. 8 Young Heirs, SW NE SE Section 20-2n-2e, Bethel sand at 1,739 ft., Aux Vases sand at 1,802 ft., total depth 1,867 ft., shot with 15 qt. in Bethel and 25 qt. in Aux Vases, flowed 864 bbl. Magnolia Petroleum Co. No. 14 Young, McClosky lime at 1,913 ft., total depth 2,022 ft., acidized with 3,000 gal., flowed 195 bbl. Hart & Hart No. 2 Young Heirs, NE cor. NW SE Section 20-2n-2e, McClosky lime at 1,915-86 ft., acidized with 4,000 gal., flowed 600 bbl. in 3 hours, rated at 4,200 bbl. a day. W. R. Curry No. 3 Young Heirs, Benoist sand shot with 50 qt. at 1,757-90 ft., Aux Vases sand at 1,806 ft., total depth 1,886 ft., flowed 650 bbls. W. R. Curry No. 2 Young strip, SW cor. NE NE SE Section 20-2n-2e McClosky at 1,950 ft., total depth 2,000 ft., flowed 2,000 bbl. Texas No. 4 M. Johnson, SW SE NE Section 16-2n-2e, McClosky at 2,062-91 ft., acidized with 3,000 gal., flowed 49 bbl. in 3 hours, rated at 343 bbl. a day. Texas No. 16 E. Jett, NW SW SE Section 16-2n-2e, McClosky at 2,023-50 ft., acidized with 3,000 gal., flowed 101 bbl. in 3 hours, rated at 700 bbl. a day. Texas No. 13 E. Jett, NE SW SE Section 16-2n-2e, Benoist at 1,828-60 ft., shot with 10 qt., pumped 30 bbl. in 3 hours, rated at 210 bbl. a day. Potter Brothers No. 4 M.&I. R.R. "A," SW cor. NE SE Section 16-2n-2e, McClosky at 2,063-80 ft., acidized with 3,000 gal., flowed 1,100 bbl. through 2½-in. tubing. Magnolia Petroleum Co. No. 6 Phillips, SE SW NE Section 16-2n-2e, top of Ste. Genevieve lime at 1,972 ft., Roseclaire at 1,997 ft., Fredonia at 2,060 ft., total depth 2,100 ft., acidized with 4,000 gal., flowed 1,560 bbl.

Illinois Fields

HIGHLIGHTS OF THE WEEK: An increase of 3,995 bbl. per day in the production of the basin fields, and an increase of 3,850 bbl. per day in the whole state, was one of the features of the week in Illinois. A 4,224-bbl. and a 4,000-bbl. well from McClosky limestone in the Salem field in Marion County, were the largest wells yet brought in in the basin area. The fact that 4,000-bbl. wells are possible in wells drilled to the McClosky lime in Marion County supplies a further serious threat of overproduction in a state where there is no legal control of crude output. A few McClosky wells heretofore have produced over 3,000 bbl. initially, but the most of the wells in that formation were of the 1,000-bbl. class, or below, in initial output.

Daily average production for the week: New fields, 206,220 bbl.; old fields, 8,480 bbl.; total, 214,700 bbl.

Total operations including locations, rigs and wells drilling, 446.

Clay County

In Clay County, Pure Oil Co. No. 1 Stanford, C E½ SE SW Section 32-3n-8e, Roseclaire top at 2,995 ft., total depth 3,090 ft., acidized with 5,000 gal., flowed 962 bbl. Kingwood Oil Co. No. 3 Graham, NW SW NE Section 13-3n-6e, McClosky pays from 2,971 to 3,036 ft., total depth 3,051 ft., acidized with 5,000 gal., produced salt water and was abandoned. Pure Oil Co. No. 1 Leota McCracken, C E½ NW SW Section 3-1n-8e, pay at 3,030-85 ft., at intervals, acidized with 5,000 gal., pumped 188 bbl. of oil and 2 bbl. of water. Pure No. 1 Hubble, C E½ NW SE Section 4-1n-8e, pay at 3,041-73 ft., at intervals, flowed 461 bbl. naturally

Louden Field Completions

In the Louden field in Fayette County, Carter Oil Co. No. 6 McClain, SW NW NW Section 5-7n-3e, shot with 20 qt. at 1,556-62 ft., flowed 150 bbl. in 9 hours, rated at 900 bbl. a day. Carter No. 7 Hobbs, SE NE, NE Section 6-7n-3e, producing from sands at 1,460-86 ft. and 1,553-75 ft., lower sand shot with 20 qt., swabbed 918 bbl. Carter Oil Co. No. 5 Goodson, SE SW NE Section 7-7n-3e, Bethel sand at 1,557-71 ft., shot with 20 qt., swabbed 64 bbl. in 6 hours, rated at 256 bbl. a day. Carter No. 3 Lily Mills, SW NW NE Section 7-7n-3e, Cypress sand at 1,440-75 ft., Bethel at 1,545-51 ft., Cypress sand shot with 40 qt., and later acidized with 1,000 gal. and again shot with 20 qt., swabbed 350 bbl. in 9 hours and rated at 644 bbl. a day. Carter Oil Co. No. 6 Marie Thornton, NE SE NW Section 7-7n-3e, Cypress sand at 1,470-1,510 ft., stray sand at 1,565-72 ft., Bethel sand at 1,581-92 ft., shot and acidized, swabbed 114 bbl. of oil in 12 hours, rated at 332 bbl. a day. Carter Oil No. 1 Mike McDonald, NW NW SW Section 8-7n-3e, total depth 1,574 ft., shot and acidized, it swabbed 191 bbl. Carter Oil Co. No. 2 Owens, SE NE NW Section 20-7n-3e, shot with 20 qt. at 1,546-52 ft., swabbed 66 bbl. per day. J. H. Vandenbark No. 2 Breeze, SE NW NE Section 20-7n-3e, old well plugged back from 1,626 ft. to 1,600 ft., shot with 60 qt. at 1,510-30 ft., pumped 200 bbl. Carter Oil Co. No. 6 Feezel, SE SW NE Section 29-7n-3e, shot with 40 qt. at 1,529-39 ft., swabbed 225 bbl. Carter Oil Co. No. 6 Reese, SW SE SE Section 30-7n-3e, shot with 20 qt. at 1,558-64 ft., swabbed 174 bbl.

Carter Oil Co. No. 2 Buesking, NW SW SE Section 2-8n-3e, in the north end of the field, shot with 60 qt.

at 1,493-1,520 ft., swabbed and flowed 340 bbl. in 15 hours, rated at 512 bbl. a day. Carter No. 9 Larrimore, NW NE SW Section 11-8n-3e, producing sands at 1,477-1,514 ft. and 1,560-78 ft., pumped 141 bbl. in 18 hours, following 20- and 60-qt. shots, rated at 192 bbl. a day, showing some water. Carter Oil Co. No. 1 Lilly, SE cor. SW NW Section 16-8n-3e, dry and abandoned at 1,602 ft.; no Cypress sand, and stray sand at 1,594-98 ft. contained only water. Carter Oil Co. No. 2 M. Williams, SE NE NE Section 22-8n-3e, flowed 175 bbl. in 8 hours and is rated at 455 bbl. a day. It was acidized with 1,000 gal. at 1,410-86 ft., shot with 20 qt. at 1,570-76 ft. and 1,475-81 ft. Carter Oil Co. No. 1 Botterbusch, SW cor. NW SW Section 29-8n-3e, shot with 10 qt. at 1,510-13 ft., swabbed 70 bbl. a day. Carter Oil Co. No. 2 Pearl McClain, NW SE SE Section 32-8n-3e, Cypress sand at 1,452-96 ft., acidized with 1,000 gal., Bethel sand shot at 1,565-71 ft., and then Cypress shot with 20 qt. at 1,460-68 ft., flowed 224 bbl. in 8 hours, rated at 666 bbl. a day. Carter Oil Co. No. 2 Mary Dial, SE NW NW Section 34-8n-3e, shot with 50 qt. at 1,534-50 ft., swabbed 108 bbl.

In Other Counties

In Lawrence County, Joe Young, Jr., and others No. 1 Bierhaus, C W½ W½ Section 13-4n-11w of second principal meridian, pay 776-86 ft., but tools were lost in the hole which showed 2,000 cu. ft. of gas. The hole was abandoned but the gas will be used to drill another well.

In Richland County, Pure Oil Co. No. 2 Howard Cazel B, SE NW NW Section 25-4n-9e, Cypress sand at 2,537-51 ft. and Weiler at 2,577-97 ft., pumped 300 bbl., producing from both sands. Pure No. 2 Southgate, SW SW NE Section 23-4n-9e, pumped 51 bbl. in 24 hours, producing from sands at 2,585-99 ft. and 2,627-35½ ft. Mabee Drilling Co. No. 4 Sparr, NW NE SE Section 23-4n-9e, Weiler sand at 2,573-92 ft., shot with 20 qt., pumped 99 bbl.

In Clay County, Dick Duncan No. 1 Huber, SW SE NW Section 17-5n-5e, dry and abandoned at 2,525 ft. F. J. Searight No. 1 Wilson, SW SW NW Section 6-5n-5e, dry and abandoned at 2,552 ft.

Coates and others wildcat completion, which opened a pool in Gallatin County, pumped 130 bbl. a day for seven days. The well is No. 1 Green B, SE cor. Section 17-9s-9e. It had Waltersburg sand at 1,767-94 ft. and shot it with 20 qt. at 1,775-94 ft., total depth.

In Franklin County, Adams Oil & Gas Co. No. 1 Old Ben Coal Co., SW SW NE Section 19-5s-2e, was dry and abandoned at 4,688 ft. It had Devonian lime top at 4,522 ft., and Silurian top at 4,577 ft. It was an old well deepened from 3,102 ft.

In White County, Robinson and others No. 1 Springer, NE cor. SW NW Section 18-4s-8e, was dry and abandoned at 3,608 ft. McClosky lime was penetrated at 3,525-82 ft. It had streaks of saturation.

In Jefferson County, Pyramid Petroleum Co. No. 1 Inland Steel Co., C S½ NW SW Section 30-4s-2e, was dry and abandoned at 3,101 ft. St. Louis lime was topped at 3,005 ft.

In Wayne County, Rockhill Oil Co. No. 2 Twist C, C W½ SW SW Section 4-3s-7e, had pay at 3,349-62½ ft., which was acidized with 500 gal. The well pumped 6 bbl. of oil and 100 bbl. of water in 24 hours.

In Washington County, Shell Petroleum Co. No. 3 Holton, NW NW NE Section 22-3s-3w, Benoist sand at 1,266-93 ft., shot with 21 qt., pumped 160 bbl. of oil and no water. Manitou Petroleum Corp. No. 1 Kurwicki, NE cor. NW NE Section 22-3s-3w, Benoist at 1,275-89 ft., shot with 10 qt., pumped 210 bbl. Magnolia Petroleum Co. No. 1 Kurwicki, NW SE SE Section 15-3s-3w, Benoist at 1,247-62 ft., pumped 143 bbl. Magnolia Petroleum Co. No. 6 Francis, SW SW SE Section 15-3s-3w, Benoist at 1,267-77 ft., shot with 10 qt., pumped 130 bbl. Wilson and others No. 1 Greenburg, NE cor. NW SW SW Section 28-3s-3w, Benoist at 1,321-39 ft., total depth, dry and abandoned. Pollack No. 1 Leibrock, SE SE SW Section 2-3s-3w, Benoist at 1,321 ft., total depth 1,379 ft., dry and abandoned.

In Wayne County, Iroquois Oil & Gas Co. No. 1 Winzenberger, NE NE SW Section 7-3s-9e, McClosky lime at 3,359-63 ft., total depth 3,423 ft., shot with 30 qt. at 3,359-70 ft., bailed dry, abandoned. Pace and German No. 1 Church lot, NW cor. Section 3-2s-7e, pay at 3,227-33 ft. and 3,239-48 ft., acidized with 2,000 gal. and then with 8,000 gal., pumped and flowed 350 bbl. Whitty No. 1 Duke, C N½ NE NE Section 28-2s-6e, McClosky lime at 3,315 ft., total depth 3,402 ft., dry and abandoned.

In Jefferson County, Minerva Oil Co. No. 1 Sargent, SE SE SE Section 21-1s-2e, Fredonia lime top at 2,143 ft., dry and abandoned at 2,200 ft.

In St. Clair County, Elsye & Benson No. 1 Schulte, SW SW NW Section 27-1n-10w, Trenton lime top at 539-90 ft., pumped 35 bbl. of oil and 400 bbl. of water.

Active Wildcats

Many of the wildcat drilling wells in the state are shut down for one or another reason. High water is delaying some operations but not to the extent it did earlier in the spring.

In Christian County, Heidt No. 1 Smith, SW cor. SE Section 10-13n-1e, total depth 1,072 ft., running 6-in. casing. M. A. Marks No. 1 Buhs, SE SW NW Section 13-11n-1w, drilling at 655 ft.

In Edgar County, A. M. Meyers No. 1 Brinkerhoff, C SE SE Section 26-13-13w, total depth 1,905 ft. It is reported this test will be abandoned.

In Moultrie County, Seaboard Oil Co. No. 1 Horn. SW SE NE Section 29-13n-5e, Fredonia lime top at 1,924 ft., drilling at 1,951 ft.

In Shelby County, Illican No. 1 Carr, SW SE NE Section 12-13n-2e, Chattanooga shale at 2,612 ft., drilling at 2,750 ft.

In Coles County, Dee Brothers No. 1 James, NW NW NE Section 12-12n-8e, drilling at 2,307 ft. Carter Oil Co. No. 1 Akers, NW SW SW Section 1-11n-7e, building derrick. W. R. Miller No. 1 Stull, SE SW NE Section 21-11n-10e, drilling at 600 ft. W. R. Miller No. 1 McConnell, SW NW NW Section 23-11n-10e, total depth 590 ft., plugged back to 585 ft., will test on the pump.

In Clark County, W. R. Miller No. 1 Booth, SE NE NW Section 17-11n-14w of second principal meridian (corrected location), drilling at 355 ft. Breeding and others No. 1 Gard, SW SE SE Section 2-9n-12w, sand at 650-782 ft., drilling at 1,150 ft. Leatherman No. 1 Tyhurst, NW SW SE Section 26-9n-14w, drilling in sand at 640 ft. after penetrating three sands, each of which had a small showing of oil.

In Montgomery County, Cassen and others No. 1 Wilkering, NW SW NE Section 34-10n-2w, Devonian

(Continued on Page 95)

MEEHANITE

CASTINGS . . .

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General Foundry & Mfg. Company	Flint, Mich.	The International Meehanite Metal Co., Ltd.	London, Eng.
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Kinney Iron Works	Los Angeles, Calif.		

Texas and Louisiana Gulf

By NEIL WILLIAMS

St. Charles Parish, La., May Have New Pool at 10,060 Ft.

HOUSTON, Tex., May 20.—Texas Co. No. 1 L. L. and E. Paradis, St. Charles Parish, coastal Louisiana, loomed as the discovery well of a new field as a drill-stem test showed tremendous gas pressure, and a series of production tests are scheduled to be made in several sands logged by an electrical survey. The well was drilled to a total depth of 10,787 ft., where mechanical trouble developed. A short string of 7-in. casing was cemented at 10,077 ft., the hole was drilled out to bottom, and the casing was perforated at 10,060-70 ft. On a drill-stem test using a 3,700-ft. water cushion, the well cleaned itself of the cushion in 10 minutes, and the pressure built up to 3,200 lb. while flowing through the separator. The well is located in Section 39-14s-20e, and if completed as a commercial producer it will open the first production in the parish.

Humble Oil & Refining Co. No. 38 Orleans Levee Board, recently completed on the Potash dome, Plaquemines Parish, as the second deep producer on the structure at a total depth of 7,980 ft., has been deepened and recompleted with an increase in production. The well quit flowing May 1, and the hole was cored deeper, finding the top of the sand at 8,046 ft. and coring the section to a total depth of 8,060 ft. Screen was set and the well was completed making an initial daily production of 418 bbl. of 24.7-gravity oil, flowing through a ½-in. choke under a tubing pressure of 940 lb. and casing pressure 250 lb.

In Terrebonne Parish, Texas Co. No. 1 Continental Land & Fur Co., Section 29-18s-14e, which was completed as a dry hole in February at a total depth of 12,483 ft., is being prepared for a production test. A drilling barge was moved back to the location, and the hole cleaned to 9,930 ft. Casing is being perforated at 9,765-82 ft. in an attempt to complete the well as a gas producer in order to furnish fuel for the drilling of a second well, approximately 1 mile south. The first well logged several encouraging showings below 11,000 ft., but due to mechanical trouble no successful test was ever made.

North Elton Not Encouraging

Prospects of opening production on the North Elton prospect, Allen Parish, were not encouraging as Bel Oil Corp. No. 1 J. A. Bel tested salt water on a second production test. Casing was perforated at 6,917-19 ft., which was considered the best of several showings, and the well built up 15 lb. of pressure for about 15 minutes and then went dead, recovering 69 stands of salt water and mud. The hole has been plugged back to 6,000 ft., and another test will be made. Should the well fail to produce, the hole will be abandoned, and it is reported that the company intends to recheck the structure with geophysical instruments. The well has showed evidence of structure, being approximately 200 ft. higher than the highest well in the North Tepetate field, in Acadia Parish.

In the Baton Rouge field (University), Guaranty Oil Co. No. 1 D. J. Morgan was abandoned at 7,636 ft. Locations for two tests were made in the field by George Echols for No. 1 Morgan and No. 1 E. Duplantier, located north and northeast of production. The wells are being drilled on a farmout lease from the Superior Oil Co.

Falcon-Seaboard Oil Co. No. 1 J. H. Hobgood, in the Pikes Peak area, Pointe Coupee Parish, is drilling below 7,950 ft., and is expected to be abandoned after it reaches a contract depth of 8,000 ft. This has been one of the most interesting wildcats drilled along the Sparta-Wilcox trend, and although it has shown evidence of structure, the Wilcox section, topped at 7,249 ft., is reported to have shown salt water with only slight showings of oil or gas. Additional development is expected to be started in the area.

The Eola field, Avoyelles Parish, was being extended ¼ mile to the east as Sun Oil Co. cemented casing on bottom at 8,568 ft. in No. 1 Townsend, Section 8-2s-3e. The sand is reported to have been topped at 2,523 ft. and showed saturation to the total depth.

On the south flank of the Roanoke field, Jefferson Davis Parish, Humble Oil & Refining Co. is attempting to open production from a shallow sand with the completion of No. 6 DeVilbiss. Sand showing oil was cored at 4,195-98½ ft., and tubing is being run for a production test. All production heretofore has been developed at various depths below 8,400 ft., and previous deep tests drilled on the flank of the structure have been failures.

T. G. Markley No. 1 M. L. Vincent, east of the Tepetate field, Acadia Parish, has been abandoned at a total depth of 9,040 ft. Although this well is reported to have checked from 160 to 200 ft. higher than the well in the Tepetate field, and logged several slight showings, an electrical survey showed little possibility of production.

On the Texas Side

Along the Texas Coast, O. C. Garvey and others No. 1 Foster Lumber Co., a Wilcox test in the Willis area, Montgomery County, was abandoned at a total depth of 7,041 ft. The Wilcox formation was topped at 6,750 ft., and broken sand with a slight gas and distillate odor is reported to have been recovered in cores at 6,700-85 ft. and at 7,004-08 ft. Poor recovery was made at 7,008-18 ft. and an electrical survey showed unfavorable results. Location is in the center of Section 5, Neil Martin Survey.

In the Glenflora area, Wharton County, Cockburn Oil Co. and others No. 1 Sam Hamburger is drilling in shale below 4,125 ft. The Discorbis was topped at 3,950 ft., and the Heterostegina at 4,030 ft. Correlated on these markers, the well is reported to be running high. In the Magnet-Withers area, Smith & McDannald No. 1 Mary L. Martl, 1 mile northeast of production in the S. Castleman Survey, is drilling in shale below 2,000 ft.

Housh & Thompson and others No. 1 A. W. Robbins, Edward T. Branch Survey, Smith's Point prospect, Chambers County, was abandoned at 9,512 ft. with no showing of oil or gas. In the southern part of the county and across East Bay from the Caplen field, in Galveston County, Plymouth Oil Co. is moving in a rig to the Robinson Lake area for a 9,000-ft. test on the Wilburn lease in the William Moore Survey.

On the east flank of the Big Creek field, Fort Bend County, Gulf Oil Corp. No. 77 Davis has been plugged back from a total depth of 8,273 ft. to 3,700 ft., and the 7-in. casing, cemented at 7,072 ft., will be perforated to test at 3,690-3,700 ft. This is the deepest test drilled on the structure.

Sun Oil Co. No. 1 Hudnall and others, a northeast offset to the discovery well, and the second well completed in the Caplen field, Galveston County, flowed 720 bbl. of fluid per day through a ¼-in. choke, of which 5.1 per cent was basic sediment and water. Tubing pressure was 1,125 lb. and casing pressure 1,250 lb. The hole was drilled to a total depth of 7,536 ft., and the well was completed through perforated casing at 7,388-7,404 ft.

Drilling was started on two wells in the newly opened Aldine field, Harris County, and location was made by Earl Hankamer for No. 1 W. B. Rowland, center of Lots 42 and 43 in the E. Farias Survey, about 1,500 ft. southeast of the discovery well. The drilling wells are Texas Gulf Producing Co. No. 1 O. P. Hairgrave, southwest, and No. 1 Ory Heath, northeast, of the discovery well.

On the southeast flank of the Esperson dome, Liberty County, General Crude Oil Co. No. 2-B Esperson perforated casing at 6,993-7,016 ft. and was completed for an initial production of 510 bbl. per day, flowing through a ¼-in. choke. The well is about 1,000 ft. west of the same company's No. 1-B Esperson, recently completed at approximately 7,300 ft. in a new sand.

George Echols No. 4 Ross-Stewart, on the southwest side of the League City field, Galveston County, perforated casing at 8,683-8,702 ft. and is flowing at the rate of 10 bbl. per hour through a ⅛-in. choke. The well is 266 ft. north of No. 2 Ross-Stewart, which was completed in a deeper sand below 9,000 ft. Phillips Petroleum Co. No. 1 Bertha Lobit has been completed for an initial production of 81 bbl. per day, flowing through a ½-in. choke. This well was drilled to a total depth of 10,427 ft., and completion was made through perforated casing at 8,946-51 ft.

In the Mount Houston area, Harris County, Jack Frazier No. 3 Lena Griffith was abandoned at 4,080 ft. Location for another test in the same area, about 1 mile southeast of the above dry hole, was made by Consolidated Oil Co. and others No. 1 Holtkamp in the Eli Noland Survey. The well will also be drilled to the Frio formation which showed evidence of production in Jack Frazier No. 1 Griffith.

Juliff Discovery Delayed

Completion of Hamman Exploration Co. No. 1 Darrington State Prison Farm, discovery well of a field in the Juliff area, Brazoria County, has been delayed due to mechanical trouble. Corrected information of the well shows a total depth of 8,917 ft. The well was tested last week through perforated casing at 8,250-8,300 ft. On a 12-hour drill-stem test through a ¼-in. choke on bottom and a ½-in. choke on top, the well flowed an estimated 15 bbl. of oil per hour for 11 hours, flowing into storage under 750 lb. of working pressure. While final completion was being made, water and mud is reported to have shown, due to a bad cement job, and the bottom of the hole has been recemented.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Danbury field: Smith & McDannald No. 2 Haury, 3,511 ft., abandoned. Hastings field: Stanolind Oil & Gas Co. No. 10 Autrey, perforated casing 5,964-6,023 ft., 615 bbl., ¼-in. choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 15 X. Zappe and others, 7,080 ft., 696 bbl., ¼-in. choke. Cedar Point field: Salt Dome Oil Corp. and others No. 56-94 State, 6,950 ft., abandoned.

Fort Bend County

Thompson field: Gulf Oil Corp. No. 16 Booth, 3,526 ft., abandoned.

Galveston County

Caplen field: Sun Oil Co. No. 1 Hudnall and others, perforated casing 7,388-7,404 ft., 720 bbl., ¼-in. choke, Dickinson field: Bennett Oil Corp. No. 2 Storm, perforated casing 8,027-39 ft., 203 bbl., 12/64-in. choke. Mar-Tex Oil Corp. No. 11 Maco Stewart, perforated casing at 8,470-8,505 ft., 590 bbl., ¼-in. choke. League City field: Phillips Petroleum Co. No. 1 Lobity, perforated casing 8,946-51 ft., 81 bbl., ⅛-in. choke.

Hardin County

Silsbee field: Humble Oil & Refining Co. No. 3 Kirby, 6,838 ft., 115 bbl., ⅛-in. choke.

(Continued on Page 84)

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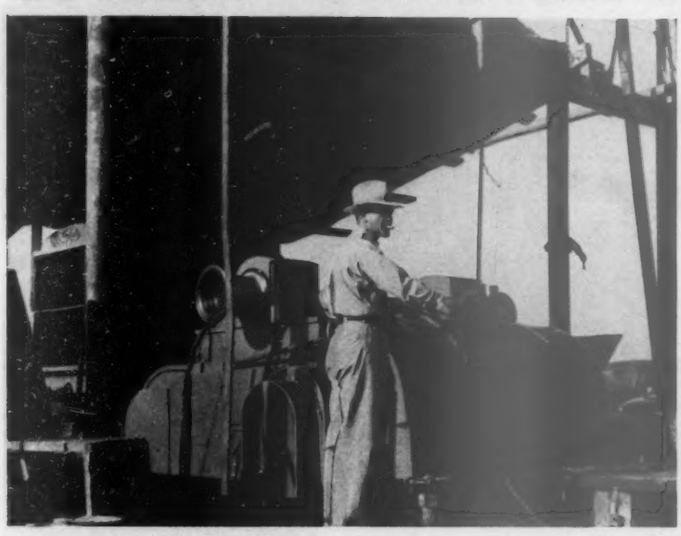

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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ont., May 20.—Effective May 16, crude allowables for Turner Valley were increased from 19,500 to 22,500 bbl. a day. Under the new schedule, Harris and associates No. 1, LSD 13, Section 9-18-2w5, is the largest producer, with 685 bbl. a day. Royal Canadian Oil Co. No. 2 ranks second, with 652 bbl.; and other major producers are: Home Oil Co. No. 2 Millarville, 648 bbl.; Royalite Oil Co. No. 36, 574 bbl.; Extension Royalties No. 1, 555 bbl.; Sundance Royalties No. 1, 539 bbl.; Frontier Royalties No. 1, 523 bbl.; Anglo-Canadian No. 3 and Royalite No. 30, 522 bbl. each; Commoil No. 1, 513 bbl.; Prairie Royalties No. 1, and Sunset Oils No. 1, 501 bbl. each. There are eight wells between 400 and 500 bbl. and 15 between 300 and 400 bbl. Intercity (Producers Crude Corp.) No. 1 has a temporary allowable of 386 bbl.

Restrictions on Mercury Royalties No. 1 and National Petroleum Corp. No. 1, imposed by the Alberta Conservation Board on the ground that they exceeded their quotas, will be lifted before the end of the month. The conservation board engineers are conducting a new series of flow and pressure tests throughout the field.

Turner Valley Deliveries

Pipe line runs from Turner Valley to the Calgary refineries in April totaled 513,907 bbl. against 334,155 bbl. in March. Deliveries for the four months of 1939 were 1,625,037 bbl. compared with 1,543,451 bbl. in the same period last year.

Of the April deliveries, Imperial Oil Refineries took 401,695 bbl., including 388,437 bbl. of crude and 13,258 bbl. of naphtha. British American Oil Co. took 112,212 bbl., including 111,862 bbl. of crude and 350 bbl. of naphtha.

West Central Producer

In the westerly extension of West Central Turner Valley, Alberta, East Crest Oil Co. No. 4, LSD 8, Section 6-19-2w5, finished 32 ft. in the black limestone at 8,037 ft., after getting the Madison contact at 7,540 ft. After clearing itself, the well was acidized and was testing for potential. A good producer with crude around 43 gravity is indicated. Porosity in the upper lime extended about 100 ft. and about 40 ft. in the lower lime. The completion extends the proven field about one-half mile to the west.

Tests in the Lime

In the south end of the field, George Harris and associates No. 2, LSD 13, Section 9-18-2w5, which started with a flush estimate as high as 7,200 bbl., has shown some fluctuation in production, dropping at times to 250 bbl. a day. Packer is being adjusted to secure steady production. Allowable has been increased to 685 bbl. a day.

West of the main field, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, bottoming at 9,994 ft., is swabbing about 50 bbl. a day, with occasional flows.

In Section 20-18-2w5, York Oils No. 2, LSD 6, is deepening below 7,673 ft. after getting the Madison limestone at 7,569 ft.

In Section 16-18-2w5, Okalta Oil Co. No. 8, LSD 6, got the Madison limestone at 6,650 ft. and is standing cemented in the top of the lime.

Steveville Field

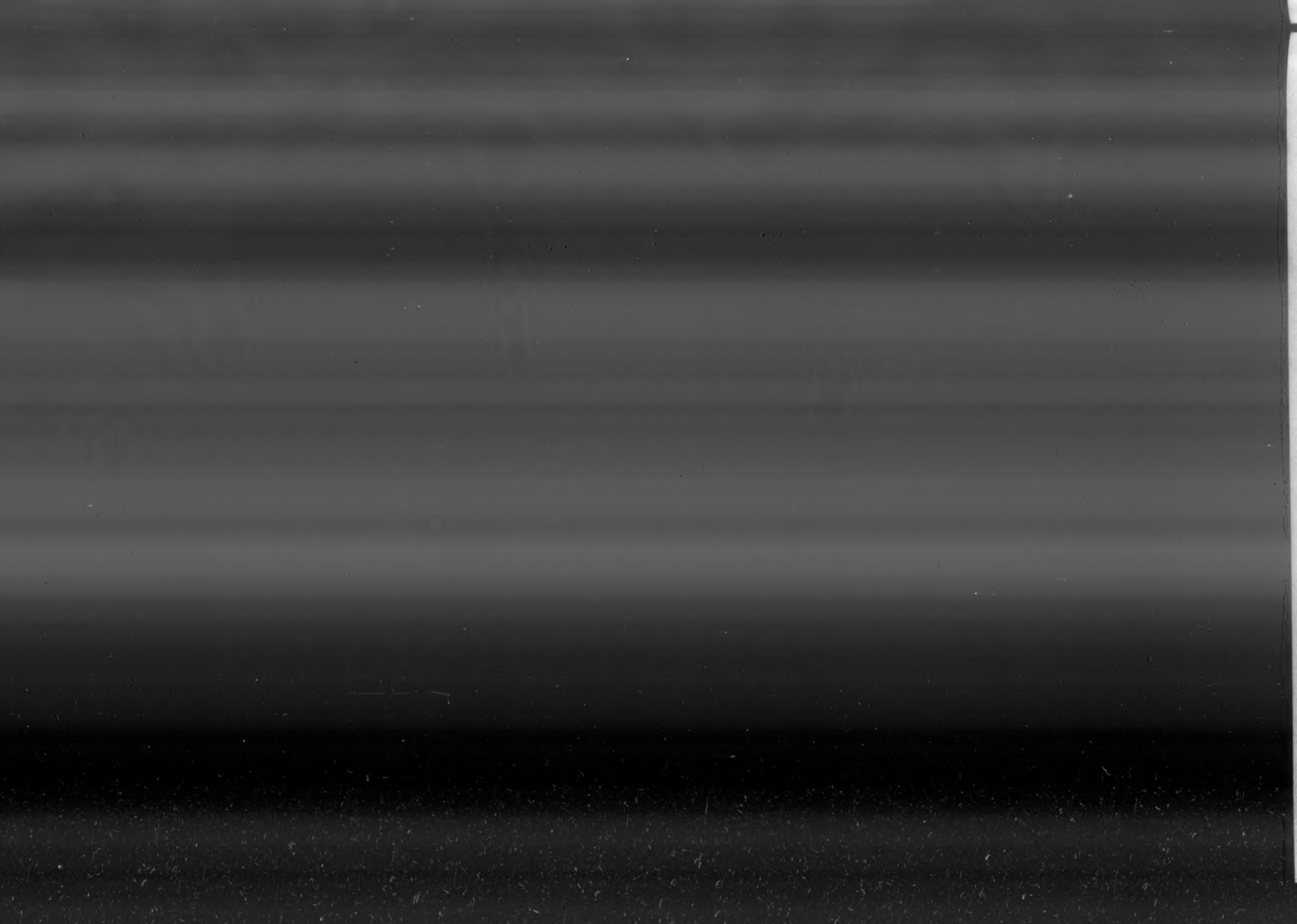
In the Steveville field, some 120 miles east of Calgary, Anglo-Canadian Oil Co. No. 2, LSD 4, Section 14-20-11w4, blew into spectacular production at 3,262 ft., just after drilling out cement in the top of the Madison limestone. The gas flow was estimated as high as 15,000,000 cu. ft. a day under 1,350-lb. pressure, and was accompanied by substantial quantities of "sweet" black crude, much of which was vaporized by the pressure. The crude is somewhere between 16 and 20 gravity, and of asphaltic base, and possible production is estimated between 200 and 400 bbl. a day.

The well blew in unexpectedly, while the drillers were preparing to set a packer on the drill stem to test gas production below the cement. The drilling fluid was blown clear of the hole, followed by a rush of gas and black crude, which scattered oil over a mile of surrounding territory. After blowing wide open about 12 hours a control head was installed and efforts made to force water down the hole under heavy pressure to enable the crew to withdraw the drill pipe, for a production test. Baroid was then used and pressure got under control. Drill stem has been removed and tubing run for a production test.

The field is about 120 miles east of Calgary and 170 miles west of Regina, Sask.; and 170 miles northeast of Turner Valley. Potential oil lands on structure are estimated at 200,000 acres. Anglo-Canadian Oil Co. and allied interests hold 65,000 acres, and major acreage holders are Altoba Agencies, Dawson-Steveville Syndicate and the California Co., Alberta subsidiary of Standard Oil Co. of California. The acreage leased extends about 35 miles north and south and about 12 miles east and west. Anglo-Canadian No. 2 is on C.P.R. acreage subleased from Altoba Agencies, and Anglo-Canadian No. 1, LSD 2, Section 13-21-12w4, some 7½ miles northwest of No. 2, is on Alberta government acreage subleased from Dawson-Steveville Syndicate. Anglo-Canadian No. 1 is standing cemented in the top of the Madison at 3,178 ft., and will resume drilling as soon as No. 2 is completed. Since the strike, practically all close-in acreage has been tied up.

The field is about 55 miles from the Bow Island gas field, original source of supply for Calgary, and 1½ miles from the Canadian Pacific Railway, with the nearest Canadian National line 15 miles distant. Both railways are large users of fuel oil, for which purpose the Steve-

(Continued on Page 113)



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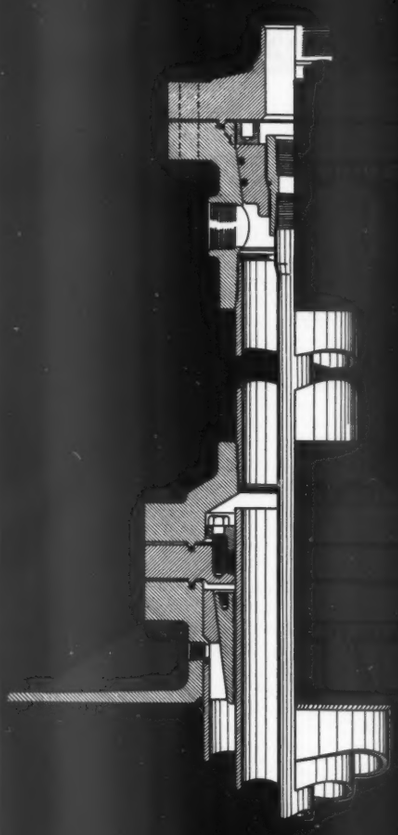

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Eastern Field Report

By STAFF CORRESPONDENT

Pleasants County Deep Test Is Drilling in Oriskany Sand

PITTSBURGH, Pa., May 22.—The important test of the Columbian Carbon Co. on the consolidation of the N. L. Ervin, Giles Hammat, and Edward Hammat Heirs farms in Grant district, Pleasants County, West Virginia, topped the Oriskany sand at 5,229 ft. and was drilling 5 ft. in that formation which was void of any showing. The top of the Corniferous lime was 5,002 ft. giving a lime section of 227 ft.

It is on the Burning Springs anticline with a surface elevation of 966.5 feet and is just west of the surface high and at the southern end of the north closure. On the Marietta Quadrangle, it is 1 mile south of Eureka on the Ohio River. This is the third test on the structure to reach the Oriskany, the two previous failed to find production.

A deep test in Jackson County, West Virginia, has been started by Joe Rubin and others on the E. W. Brown 554 acres in Ravenswood district, surface elevation 620 feet. On the Ravenswood Quadrangle it is 2.7 miles south of Lat. 39° and .49 of a mile west of Long. 81° 45'. It is about ⅞ mile north of the 400,000 cu. ft. gas well from the Oriskany sand on the W. J. Brown farm near Ravenswood on the Ohio River. The new test is drilling at 150 feet. East of it, these operators have a prospective Oriskany test on the Carson farm on which drilling will start within the week.

SOUTHEAST OHIO

In Fairfield County, Gas Producing Co. of Ohio and others completed a well on the C. L. Berry and others lease in Section 23, Walnut Township, in the lime at 1,976 ft. It flowed 60 bbls. the first 24 hours, with about 100,000 cu. ft. of gas. It had not been shot.

In Medina County, the Preston Oil Co. completed No. 29 Parent, Lot 5, Tract 16, Chatham Township, in the Berea grit at 414 ft. It produced 60 bbl. the first day after shot.

In Licking County, the McClay Brothers drilled a dry hole on the Marion U. Dunn farm in Section 24, Fallsbury Township, through Clinton sand to 2,890 ft.

In Monroe County, C. B. Houge and others completed a 5-bbl. well on the P. A. Franks farm (mapped Marilda Houge) in Section 27, Wayne Township, in Keener sand, depth 1,385 ft.

In Perry County, Davis & Hazlett completed a gas well on the A. H. Ketchum farm in Section 22, Monroe Township, in Clinton sand, total depth 3,863 ft. It gaged 800,000 cu. ft. a day, which increased to 1,500,000 cu. ft. a day after a shot.

In Cuyahoga County, Benedum & Trees had reached 2,500 ft. on the R. G. Williams lease; 1,940 ft. on the Parr farm; 900 ft. in the Jesse Killoran test; 682 ft. in the J. V. Whitbeck test. All are in Mayfield or Highland Heights Village near Euclid. This Newburg pool now has been proven 1¼ miles long and ⅝ mile wide and becomes one of the best new pools discovered with the Clinton sand possibilities as yet unknown.

SOUTHWEST PENNSYLVANIA

One gas well was completed in Southwest Pennsylvania. In Greene County, Burleigh Wright and others completed the test on the Strawn heirs farm in Richhill Township at 2,773 ft. with the Fourth sand at 2,669-80 ft. and 115,000 cu. ft. of gas at 2,675 ft.

In Washington Township, Greene County, Equitable Gas Co. has reached 2,036 ft. in No. 3 John Huffman. In Richhill Township, Manufacturers Light & Heat Co. is hauling in the rig for No. 4 Barnett Wiley.

In Wayne Township, Greene County, Peoples Natural Gas Co. had reached 3,475 ft. deepening No. 1 John Phillips and will not deepen further. Total gas was 39,000 cu. ft. a day from Bayard sand at 3,256 ft. In Springhill Township, J. H. McNichols & Co. reached 3,212 ft., deepening No. 3 J. W. McNichols.

Deep Tests

On Chestnut Ridge, L. J. Houze Convex Glass Co. continued drilling the test on the Paul Dunham farm in Springhill Township, Fayette County, and reached 7,631 ft. The hole now is cased to 7,514 ft. which is landed in the cherty zone of the Onondaga. One gas pay has been struck in the new hole and the gage is over 50,000 cu. ft. a day. In the original hole, the first gas was struck at 7,609 ft., which closely coincides with the present pay.

In South Union Township, on this anticline, New Penn Development Co., William E. Snee and others have built the rig for No. 1 Summit Hotel (Heyn) and will drill it deeper. It was bottomed at 6,667 feet and produced 1,250,000 cu. ft. of gas a day from the cherty beds in the Onondaga, which volume has not declined much. Since gas was discovered in the Oriskany in the test on the J. H. Sorg farm, it was deemed advisable to deepen this test to the Oriskany, which is about 150 ft. deeper, to reach through that upper pay. A gas-saver head will be used.

In Beaver County, Columbian Fuel Co. reached 1,425 ft. in the test on the Abbie Linnenbrink and others lease in Rochester Township or through the Hundred Foot sand and cemented 8¼-in. casing. Drilling has been resumed. In Armstrong County, Peoples Natural Gas Co. was drilling at 5,508 ft. on the Lowry Martin farm on the Greendale anticline in Wayne Township.

WEST VIRGINIA

In Wood County, West Virginia, Eugene Millinger and others No. 1 John M. Marshall farm was bottomed at 1,673 ft., Maxton sand, and is good for 5 bbl. a day.

In Cabell County, Elkins Gas Co. completed No. 2 Leonard Paugh in McComas district at 3,437 ft. Brown shale lay at 2,825-3,437 ft. and Corniferous lime was topped at 3,437 ft. It gages 180,000 cu. ft. a day from the shale.

In Marion County, Carnegie Natural Gas Co. deepened No. 2 Mary Caseman in the Mannington district through Fifth sand to 3,238 ft. No pays were found below the Injun sand.

In Lincoln County, Woodall Gas Co. deepened No. 2 R. L. Stowers in Union district from 2,152 ft. to 3,630 ft. with the Brown shale at 3,254-3,590 ft. and a gage of 368,000 cu. ft. of gas a day from that horizon.

Oriskany Gas Field

One well was completed in the Oriskany gas field in Kanawha County. In Poca district, United Fuel Gas Co. completed No. 4769 O. R. Schmittauer at 5,136 ft. with Oriskany topped at 5,105 ft. and a gage of 6,048,000 cu. ft. a day. The final depth of its test on the Janey Gibson and others lease was 5,021 ft. with Oriskany at 4,977 ft. and a gage of 5,628,000 cu. ft. of gas a day.

In this district, the United Fuel Gas Co. made a location on the E. U. Dawson farm on Poca River. This company's No. 4814 W. F. Beane is shut down at 5,015 ft.; C. O. Slater and others No. 4830, drilling at 4,874 ft.; B. C. Gillespie No. 4831 at 800 ft. All are in Poca district.

In this district, the Brawley Reid Gas Co. is rigging up the A. L. Campbell test; Godfrey L. Cabot, Inc., drilling at 504 ft. in No. 2 D. Holmes Morton, and at 106 ft. in No. 3 and building rig on the Putnam Co. lease; Mullins Gas Co., drilling at 260 ft. on the Johnson-Carney lease; Meigs Development Co. at 1,550 ft. in the E. P. Higginbotham test; Spartan Gas Co., at 1,850 ft. in the Burdette-Haston test; United Carbon Co., at 3,600 ft. on the A. H. Campbell land and at 2,150 ft. in the D. D. Slater and others test.

In Elk district, Poca Fork Oil & Gas Co. was drilling at 4,375 ft. on its fee. In Union district, M. C. Allen is down 1,920 ft. in the Solon Fletcher test.

New York-Penna. Gas Fields

COUDERSPORT, Pa., May 22.—Four wells were completed in the New York-Pennsylvania Oriskany sand gas fields during the past week, two in each state. Most important of these was the second State Line field well in Pennsylvania which was drilled by Cunningham Natural Gas Co. on the F. Markey farm in Oswayo Township, Potter County. This well topped the Oriskany sand at 4,783 ft. and was completed at a total depth of 4,808 ft. It had an initial open flow of 13,400,000 cu. ft. per day with an initial rock pressure of 340 lb.

The Updegraff well on the Norman Patterson farm, Bingham Township, Potter County, got a show of gas gaging 500,000 cu. ft. at 4,894 ft. but salt water at 4,897 ft. forced the abandonment of the well at 4,901 ft. Top of the Onondaga was at 4,863 ft. and the Oriskany at 4,892 ft. The New Penn Development Co. and others' well on the E. G. Cady farm, Troupsburg Township, Steuben County, was completed at 5,052 ft. with an initial of 1,400,000 cu. ft. The fourth completion, that of the New Penn Development Co. on the Sylvia Allen and others farm, another Cameron Township, Steuben County, well, also found salt water like all but one of its predecessors in this area. It topped the Onondaga at 4,167 ft., the Oriskany at 4,177 ft. and struck salt water at 4,178 ft. at which depth it was plugged and abandoned.

New Penn Development Co. is drilling at 5,125 ft. on the Dunshie farm in Sharon Township, Potter County, 7 ft. in the Oriskany. Its original flow of 238,000 cu. ft. has increased to 970,000 cu. ft. Also in this township G. L. Cabot, Inc., is drilling at 5,153 ft. on the Reva Kemp farm; New Penn Development Co., at 4,050 ft. on the E. J. Davis farm; Empire Producing Co., at 4,505 ft. on the Nelson Kemp farm after passing the Tully at 4,235-79 ft. and at 2,053 ft. on the E. D. Plants farm and Sylvania Corp., at 935 ft. on the Dickerson farm. Just across the line in Oswayo Township, Belmont Quadrangle Drilling Co. is drilling at 1,520 ft. on the Kibbeville school lot.

In Bingham Township, Potter County, Penn York Gas Corp. is drilling at 4,023 ft. on the William Cobb farm; Van Gilder and others at 2,100 ft. on the Seiden Lewis farm, and G. L. Cabot, Inc., is building the rig on the Ella Ransome farm. Evjen, Harris and others are drilling at 5,025 ft. on the A. R. Mitchell farm, Sweden Township, while the P. P. & L. Co. is rigging up for a test on the E. A. Williams farm in Hector Township.

G. L. Cabot, Inc. is drilling at 1,775 ft. on the Lydia Owens farm; at 255 ft. on the Clifford Owens and is moving in on the Federal Land Bank farm, and Hanley & Bird are moving in on the L. Hall farm, all in Cameron Township, Steuben County. G. L. Cabot, Inc. is drilling at 4,615 ft. on the L. Highland and at 140 ft. on the Lewis Webber farm in Greenwood Township.

Another Woodhull Township, Steuben County, well neared completion in the G. L. Cabot, Inc. well on the Neva Husted farm which drilled through the Oriskany at 4,001-20 ft. and at 4,003 ft. got a flow gaging 963,000 cu. ft. The rock pressure was 225 lb. This company also has a location for No. 3 on the C. Crane farm in this township. Other Steuben wells are in Jasper Township where New Penn-Cunningham are shut down at 365 ft. on the E. Walrath and in Thurston Township where Rehler and others are drilling at 1,965 ft. on the Foster estate.

In Willing Township, Allegany County, Cunningham Natural Gas Co. is drilling at 3,543 ft.

North and East Texas

By D. H. STORMONT

Wildcat Search in Northern and Eastern Texas Unabated

WICHITA FALLS, Tex., May 22.—The staking of new locations in both wildcat areas and as outposts to several of the recently opened oil pools throughout the area, kept the North Texas district at its rapid pace of exploration for another week.

The Nocona pool of Montague County now has four active tests on as many sides which will do much to determine the actual potentialities of that Strawn sand pool. Sinclair Prairie Oil Co. has entered the play through the staking of No. 1 Gould Whaley, western part of Section 16, B.B.B.&C. Survey. The test is about 3½ miles east of the Rogers & Rogers discovery well, and on the opposite side of the town of Nocona. It is just a mile southeast of Bridwell Oil Co. No. 1 Reynolds. Bridwell Oil Co. is drilling below 3,000 ft. in its test while Rogers & Rogers are slowly drilling for the producing horizon at No. 1 Benton & Woods, north offset to the discovery. No. 1 Benton & Woods is below 4,600 ft., with the pay section expected at about 4,640 ft. West offset to the discovery well, Stanolind Oil & Gas Co. No. 1 Zachary, was spudded last week and is drilling ahead.

Also in Montague County, Cordova Union Oil Co. spudded No. 1 R. L. Cable, wildcat, in the northwest corner of the S. H. Stevenson Survey, Abstract 682, 5 miles south of St. Jo. E. B. Madden, T. C. Hadley and associates were moving in rotary for their No. 1 R. O. Braswell, H. B. Baker Survey, Abstract 19, 1½ miles southwest of the Bower Canyon sand pool, opened several months ago.

Archer County

British American Oil Co. No. 1 T. B. Wilson, Section 12, Block 3, H.&T.C. Survey, which gave Archer County and North Texas its first Caddo lime pool, flowed 111 bbl. of oil in 3 hours on official gage. Gravity of the oil tested about 44° and the well registered 255 lb. of pressure on the casing, but none on the tubing, while flowing. Production is through 20 perforations in the casing at 4,660-70 ft. Little development is expected in the area until the well is given a pipe line connection.

Interest in the play for deep production in Archer County turned to the Kadane Oil Corp. No. 1 Hemmi, Section 60, Block 3, Clark & Plumb Survey, 3 miles southeast of Scotland in the eastern part of the county. The wildcat took two cores from 5,191 ft. to 5,220 ft., believed to be Caddo lime, but recovered only 18 in. of lime, showing oil in each core. The crew is reaming, and will drill deeper.

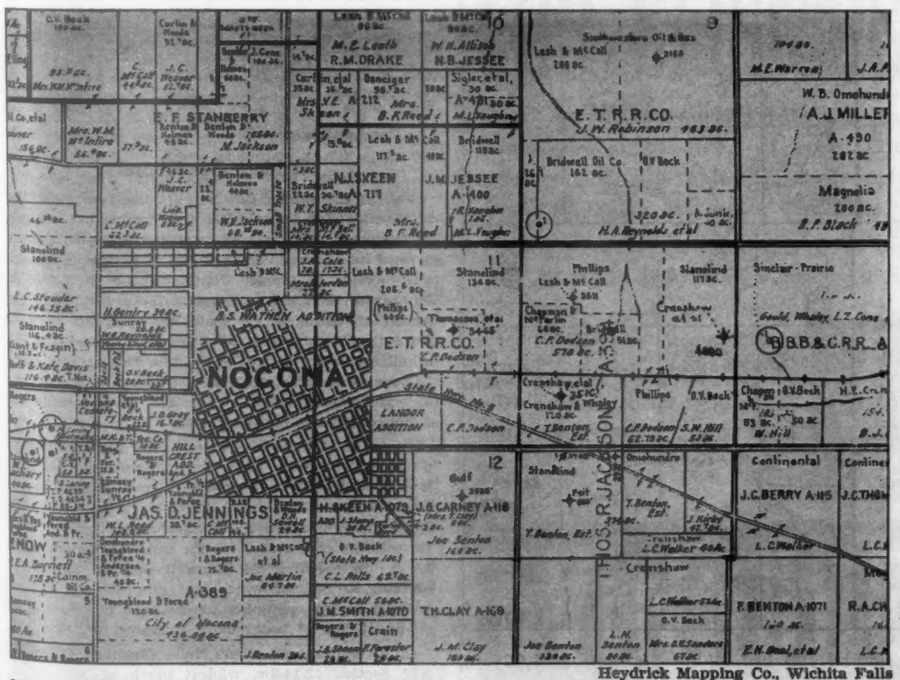
Baylor County

British American Oil Co., which gave Baylor County its first Canyon sand oil pool, is preparing to drill its fourth wildcat on the Green ranch, and on its 22,000-acre block around the discovery well. The company has made location for No. 1-C Green, in the NW¼ Section 216, T.&N.O. Survey, Abstract 1312. The location is ¾ mile northeast of the Canyon discovery well. Meanwhile the operators are attempting to complete No. 1 Cope from a section at 2,808-15 ft. The well was plugged back from 5,548 ft., after it was drilled to that depth as an exploratory hole due to the fact that the company's first well was completed as a pool opener and did not finish its 5,000-ft. contract.

Clay County

Clay County received a new wildcat when J. E. Farrell made location for No. 1 Claude P. Malone, Section 12, T.&N.O. Survey. Test is on a block of approximately 3,000 acres turned to Farrell by Horton. The test lies 4 miles southeast of the town of Henrietta.

In the Burns pool, 6 miles southwest of Blue Grove, Shell Oil Co., Inc., was rigging up spudder to drill plug from No. 1 Davis, Block 93, J. H. Belcher Survey, which may give the pool its second and deeper producing horizon. The test has logged pay from 4,750 to 4,800 ft. and broken pay from that depth to 5,100 ft., total depth.



Sinclair Prairie Oil Co. has staked in Section 16, a new eastern outpost to the Montague County, Nocona field, to make four active outposts in the recently discovered pool

EASTERN TEXAS

DALLAS, Tex., May 22.—Various stages of development in eastern Texas' active list of wildcats held the interest in a rather uneventful week for the district.

A possible extension to the Navarro Crossing pool of Houston County, Hinchcliffe & Smith No. 1 Joe Gilmore, north outpost to the area, is running casing to 5,891 ft. for an attempted completion through perforations. Sand was logged from 4,855 ft. to the total depth. The test is nearly a mile north of the field and in the Nathan Wade Survey.

Nearly ½ mile east of the field, Humble Oil & Refining Co. No. 3 Dailey Estate had drilled past 5,465 ft. in Austin chalk. Northwest of the field and in the recently extended Leon County portion, Humble Oil & Refining Co. is drilling below 5,120 ft. in No. 1 Polen, east offset to No. 1 Harris, pool extensioner.

Kaufman County

Spudding is scheduled for a new Kaufman County wildcat. Atwood, Glaspy and Raphael No. 1 fee, 4 miles west of Mabank, has been rigged up and drilling will commence in a few days. Just over the Kaufman County line and in northwestern Henderson County, Richards & Holloway are rigging up No. 1 Bauguss, west offset to the old Penn well. In the J. C. Cortez Survey of Kaufman County, J. T. McLaughlin abandoned the location for No. 1 Wood-Nash. Tyler & Smith are preparing to start at once on their No. 1 Trinity farms, staked in the G. Crocher Survey, 3 miles southwest of Mabank.

Camp County

East Texas had another Woodbine wildcat in the rigging-up stage when Harry S. Moss, Dallas operator, began moving in materials for No. 1 W. D. Keeling, about 3 miles south and a little east of Pittsburg in Camp County. It is in the Vincent Hamilton Survey and on a block of approximately 6,000 acres.

In Trinity County, W. C. Shirley abandoned No. 1 Southern Pine Lumber Co., J. A. Sepulveda Survey, 5 miles northwest of Apple Springs, at a total depth of 1,208 ft. It was dry.

Only two wells were completed in the world's largest field, East Texas, in the past week. One of the wells flowed 20 bbl. in 1 hour and the other flowed 60 bbl. in an hour. There are 27 wells listed as drilling, but some of these are inactive.

NORTH TEXAS COMPLETIONS

Archer County

Deep Oil Development and Christie No. 1 A. Schlabs, 4,171 ft., dry. Ligon and Deep Oil Development Co. No. 2 Wilson "McCrory," 4,283-4,320 ft., 720 bbl. Petroleum Producing Co. No. 1 J. N. Shephard, 4,284-4,322 ft., 840 bbl. L. Sikes No. 1 O. T. Anderson, 4,414 ft., junked. Thurmond & Lipscomb No. 3 L. F. Wilson, 4,243-4,310 ft., 1,120 bbl. P. Anagnos No. 2 B. C. Andrews, 982 ft., dry; No. 3 B. C. Andrews, 910-78 ft., 5 bbl. Continental Oil Co. No. 6 A. J. DeMoss, 988-89 ft., 115 bbl. Piper & Wilson No. 2 S. M. Cowan Estate, 1,095 ft., dry. Riner and others No. 1 R. C. Kinder B, 1,364 ft., dry.

Clay County

J. G. Beard No. 1 Earl Spring, 3,962 ft., dry; Nos. 2 and 3 Earl Spring, abandoned locations. Bridwell Oil Co. No. 1 Furd Halsell, a wildcat, 4,757-93 ft., 1,265 bbl. L. T. Burns No. 2 E. W. Browning, 4,433-50 ft., 900 bbl. R. C. Hart No. 3 M. A. Stephenson, 220-40 ft., 11 bbl. T. A. Norwood No. 2 T. P. Duncan, 1,171-91 ft., 20

(Continued on Page 102)

Oklahoma Operations

By
DAL DALRYMPLE

Kiowa Discovery Flows 100 Bbls. Oil Hourly at 1,055 Ft.

Kiowa County stole the show from other Sooner state oil areas the past week with a wildcat strike that has been termed "the most important discovery in Oklahoma since Ramsey." Although that is a matter for the future to prove or disprove, the importance of the wildcat, Gled Oil Co. and Russell S. Tarr No. 1 Watkins, SW SW NW Section 20-7-17w, is attested by the fact it had produced 8,000 bbl. of oil at the week-end and was estimated good for from 2,000 to 2,500 bbl. of oil daily at 1,055 ft. in top of Viola lime.

Drilling was started May 1, with contract depth of 2,500 ft. Fast time was made with machine and by May 14 depth of 1,051 ft. had been reached. Ten-inch casing was lowered to 1,022 ft., but not cemented. The bailer was run a few times and then the well blew out and flowed over the drilling mast. It continued to flow small heads every 45 minutes to 1 hour. On May 16 it was deepened to 1,055 ft. and flow increased to 100 bbl. an hour, and 4 days later still was flowing 80 to 100 bbls. daily. The crude was turned into earthen pits, as neither sufficient storage nor pipe lines were available. Gas was estimated at 1,000,000 cu. ft. daily. Gravity of the oil was 35.1° corrected to 64° temperature.

Operators were moving in equipment to kill flow at the week-end, as the state conservation law prohibits use of earthen storage. Casing was to be rerun and cemented on top of the pay zone.

Some observers thought this strike might be the forerunner of the big oil pool that many geologists and oil men have predicted would be found in the Anadarko basin of western Oklahoma. It is about 45 miles northwest of the Cement field in Caddo County, the principal producing area in the basin.

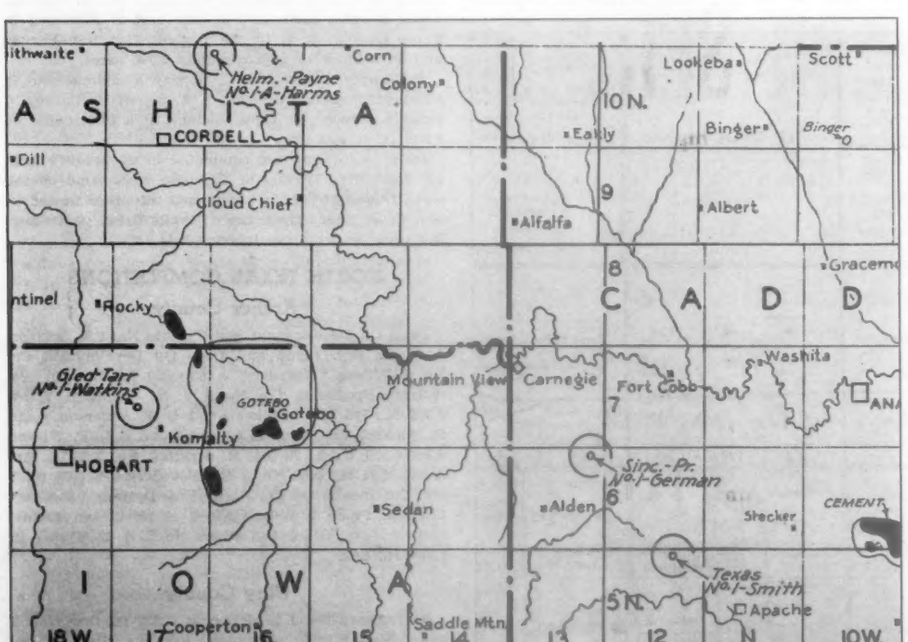
Location of No. 1 Watkins is northeast of Hobart, Kiowa County seat, and west of the Gotebo-Komalty area. It is on a block assembled more than 2 years ago by Shell Oil Co. That company farmed out some leases to Russell S. Tarr of Tulsa several months ago, and he in turn sold an interest to Gled Oil Co. and others. No close-in leases are available, so there has been little trading near the well; however, a few tracts some miles distant have been sold at regular wildcat prices. Several royalty sales have been reported, but landowners generally have been slow to sell and in some instances have increased prices too high to suit the buyers.

The wildcat is 660 ft. north of a 1,525-ft. dry hole drilled several years ago. It is thought trend of the pool will be northwest and west from the discovery well.

Kiowa County has been the scene of considerable exploration and drilling for many years. Some 250 wells have been drilled in the county, some finding small production and most of the failures having oil and gas showings. The Gotebo pool in Township 6n-17w was opened in 1908, but was practically depleted or washed out by 1925. Of 155 wells drilled in the Gotebo area, 30 produced oil, 72 gas and the others were dry. The Komalty pool, west of Gotebo, was opened several years ago and a few small producers and many dry holes were drilled. Small production also was found in recent years in a few wells in the northwest corner of the county, east of the old Granite oil and gas area in Greer County.

Two edge wells failed to find the rich Wilcox sand that has been paying off in the Ramsey pool, Payne County. T. N. Berry and others No. 1 Whitley, NW SW SE Section 18-18-2e, two locations south and east of production, was dry in Wilcox sand at 4,954 ft. E. H. Moore, Inc., and others No. 1 Guilliam, SW NW NE Section 18-18-2e, northeast of production, found Wilcox sand at 4,890 ft. and was shut down for orders at 4,913 ft.

The state's deepest well, Continental Oil Co. No. 1 Proctor, C NW Section 28-10-20w, Washita County wildcat northwest of the Kiowa discovery, was drilling below 11,726 ft.



E. C. Jacobson, Maps, Tulsa

Wildcat northeast of Hobart, Kiowa County, flowed 100 bbl. of oil an hour at 1,055 ft., opening new Anadarko basin pool. Its geographical relationship to the Cement field and other basin wildcats in Caddo and Washita counties is shown

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending May 20, and for the preceding week, was as follows:

	Barrels	
	May 20	May 13
Allen	6,500	6,750
Billings	5,750	5,060
Burbank	7,900	8,000
South Burbank	9,350	9,325
Balance Osage	17,900	17,750
Blackwell district	3,625	3,500
Bristow-Slick	7,450	7,500
Chandler	1,625	1,650
Crescent	3,150	3,625
Cromwell	3,000	3,025
Cushing-Shamrock	10,000	10,050
Duncan district	4,350	4,450
Edmond	5,275	5,350
Fish	4,000	3,950
Fitts	27,025	26,000
Jesse	2,400	2,750
Graham-Fox	4,100	4,125
Gray	875	850
Healdton	9,625	9,600
Hewitt	3,875	3,950
Keokuk	3,650	3,625
Konawa	1,200	1,225
Lucien	8,750	7,695
Moore	3,400	3,375
Oklahoma City	107,400	99,050
Olympic	3,225	3,250
Ramsey	4,350	4,500
Sasakwa	1,400	1,375
Sholem-Alechem	2,775	2,875
Seminole district:		
Bowlegs	8,650	8,750
Carr City	2,975	2,950
Dora	4,025	3,975
Earlsboro	4,975	5,000
South Earlsboro	600	575
East Earlsboro	4,150	4,075
Little River	7,275	7,250
East Little River	700	725
Maud	1,125	1,100
Mission	1,650	1,625
Seminole	8,075	8,100
East Seminole	1,425	1,400
Searight	2,500	2,525
Total Seminole	48,125	48,050
St. Louis-Pearson	37,500	37,750
Tatums	2,225	2,200
Tonkawa-Garber-Thomas	4,200	4,225
Wewoka	2,550	2,500
Yale-Jennings	3,725	3,700
Other pools	91,000	90,500
Total Oklahoma	463,250	453,155

Wildcat Operations

Phillips Petroleum Co. No. 1 Culbertson, NW NW SE Section 4-1n-5w, wildcat that opened an oil pool in the old Cruce gas area, northern Stephens County, several weeks ago, was listed as a completion the past week. It topped Pontotoc zone at 2,065 ft., Hoxbar series 2,815 ft., sand 5,578-5,614 ft., was bottomed at 5,620 ft. in shale and plugged back to 5,616 ft. When tested for 4 hours it flowed 178 bbl. of oil through 1-in. choke on 2-in. tubing, and made 24-hour potential of 1,071 bbl. Gravity of the oil was 42° at temperature of 105°. The oil-gas ratio was 1 bbl. oil to 961 cu. ft. of gas.

Carter & Hight No. 1 Rogers, SW SW SW Section 6-13-8, wildcat near Micawber in northeastern Okfuskee County, was completed for small production. It found Wheeler sand at 2,482-92 ft., Prue sand 2,710-2,800 ft., total depth 2,850 ft., plugged back to 2,598 ft., set 7-in. casing at 2,440 ft., and was shot at 2,488-98 ft. In the first 24 hours it pumped 32 bbl. of oil and 30 bbl. of water and pumped off, and on completion was pumping at the rate of 5½ bbl. of oil and 5 bbl. of water daily, pumping off.

O. A. Walters and others No. 1 Olmstead, C E½ SE NW Section 12-14-3w, wildcat north of Edmond in Oklahoma County, topped first Wilcox sand at 6,420 ft., second Wilcox sand 6,492 ft., total depth, Schlum-

berger test indicated water and the well was abandoned.

J. G. Buell No. 1 Madgett, SE SW SE Section 15-10-5, wildcat south of the North Earlsboro area in Seminole County, had dolomite at 4,765 ft., Wilcox sand 4,802 ft., total depth 4,810 ft., nothing was showing and it was dry and abandoned.

Paul Helf and others No. 1 Brisley, NE NE NE Section 22-1s-19w, wildcat in Tillman County and southeast of the Tipton pool, topped Pontotoc series at 1,360 ft., Canyon lime 2,640 ft., was bottomed at 3,515 ft. in Cosco zone, and was dry and abandoned.

E. N. Costley No. 1 Garrison, NE SE NW Section 18-4s-10w, wildcat southwest of Temple in Cotton County, missed sands and was bottomed at 1,234 ft. in shale, where it was dry and abandoned.

Pure Oil Co. No. 1 Fuqua, SW SW NE Section 18-6-16w, Kiowa County wildcat south of the Gotebo district, was dry and abandoned in Viola lime at 1,995-2,019 ft., total depth.

Richards & Richards No. 1 Price, NE SW NW Section 29-4-11w, Comanche County wildcat, was bottomed at 960 ft. in a core-drilled hole and was dry and abandoned.

New wildcat operations: Mason and others No. 1 well, SW SE SE Section 26-12-3, about 3 miles west of Meeker in southern Lincoln County, derrick; Sinclair Prairie Oil Co. No. 1 Yoeman, SW NW NW Section 1-6-13w, Caddo County, location for a 6,500-ft. test on seismograph structure; Haggerling & Lawson No. 1 Bozman, SE SE NE Section 14-5-17w, Kiowa County, about 5 miles northeast of Roosevelt and 12 miles southeast of the new oil discovery west of the Gotebo district, had dug pits.

Caddo County

Tom Palmer Oil Corp. completed a 2,000-bbl. well in the Cement field, Caddo County, at No. 2 Sterba, NW NW SW Section 35-6-10w. It found Rowe sand at 3,374 ft., was bottomed in sand at 3,401 ft., and flowed 347 bbl. of oil in 4 hours. Gravity of the oil was 37°.

Ray Stephens, Inc., No. 4 Melton, SW SE SE Section 26-6-10w, found Deese sand at 4,340-85 ft., total depth 4,388 ft., and produced 10,000,000 cu. ft. of gas daily, with 1,700 lb. top hole pressure.

Magnolia Petroleum Co. No. 12 McKenna, SW NW SE Section 11-5-9w, was bottomed at 3,423 ft. in Hoxbar zone, set 7-inch casing at 3,394 ft., bailed salt water and was abandoned

Ray Stephens, Inc., No. 2 Kidd, NE NW NE Section 27-6-10w, and same operator's No. 3 Thompson, NE SE NW Section 27-6-10w, were locations in the Cement field.

Stephens-Grady Counties

George L. Pace and others No. 23 Allen, SW SW NE NE Section 3-2s-8w, Empire field, Stephens County, had sand at 2,206-14 ft., total depth, and pumped 175 bbl. of 33-gravity oil in 24 hours.

Same operators' No. 24 Allen, NE SW NE Section 3-2s-8w, pumped 150 bbl. of oil in 24 hours from sand at 2,197-2,205 ft., total depth.

Helmerich & Payne, Inc., No. 1-A Graham, SW SW NE Section 12-1n-5w, Stephens County, an old well plugged back from 5,014 ft., was recompleted for 4,000,000 cu. ft. of gas daily. Same operator's No. 1 Wade B, W½ NW NW SE Section 12-1n-5w, an old well plugged back from 3,866 ft., was recompleted for 3,000,000 cu. ft. of gas daily. Both are in the Doyle area.

T. H. McCasland and others No. 1-A Horton, NE NE SW Section 88-3-5w, Knox field, Grady County, had sands and broken sands from 2,575 ft. to 2,761 ft., was bottomed at 2,769 ft. in sandy lime, and flowed 55 bbl. of 36-gravity oil daily.

New work in Stephens County: Carter & King No. 16 Arm, NE SE SE NE Section 26-1s-5w, Velma area, had sand at 425-440 ft., total depth, set casing at 425 ft. and was waiting on cement; Cities Service Oil Co. No. 1 Miller, NE cor. Section 5-1s-8w, Empire field, an old well being deepened from 2,185 ft., was drilling below 2,232 ft. In Grady County, T. H. McCasland No. 2-A Horton, NE NE SW Section 8-3n-5w, twin well in the Knox pool, was drilling below 1,760 ft. in shale.

Pottawatomie County

Mid-Continent Petroleum Corp. No. 1 Cecil, SW SW NE Section 6-6-4, St. Louis-Avoca district, Pottawatomie County, topped Viola lime at 4,208 ft., total depth 4,521 ft., plugged back to 4,288 ft., was acidized with 5,000 gal. and flowed 345 bbl. of oil in 24 hours.

Magnolia Petroleum Co. No. 8 Billington, SW NE NW Section 22-7-4, twin well, had Calvin sand at 3,182 ft., total depth 3,197 ft., and had initial daily production of 290 bbl. of oil.

H. L. Berkey No. 4 School Land, SE SE NE Section 36-7-4, was acidized with 8,500 gal. and flowed 250 bbl. of oil daily from dolomite topped at 4,315 ft., total depth 4,412 ft.

Magnolia Petroleum Co. No. 1 Billington B, NE SE NE Section 21-7-5, found Calvin sand at 3,775 ft., total depth 2,785 ft., and had initial daily yield of 220 bbl. of oil.

J. E. Trigg No. 1 Roberts, NE NE SE Section 21-7-5, flowed 187 bbl. of oil daily from Calvin sand found at 2,727 ft., total depth 2,740 ft.

Magnolia Petroleum Co. No. 3 Tull-Fyke G, NE NW NE Section 29-7-5, had dolomite at 4,163 ft., was bottomed at 4,202 ft., acidized with 2,000 gal., and flowed 400 bbl. of oil in 24 hours.

H. L. Berkey No. 1 Triplett, NE NE SE Section 33-8-4, was treated with 5,000 gal. of acid and flowed 360 bbl. of oil in 24 hours. Hunton lime was topped at 3,835 ft., total depth 3,881 ft.

New activity in Pottawatomie County: Denver Producing & Refining Co. No. 2 Schrader, NE SE NE Section 1-6-4, rigging up rotary; J. F. Smith No. 1 Brandenberg, SW SE NW Section 21-7-4, drilling below 3,351 ft.; Tex-Oil No. 6 Beam, SW NW NW Section 36-7-4, cellar; Tabor and others No. 5 Miller, NE SW SE Section 29-7-5, rig; W. B. Berry No. 1 Williams, SW NW NE Section 6-10-4, Shawnee pool, cellar and pits; R. Olsen Oil Co. No. 2 Gillis, SW NW NW Section 5-10-4, cellar and pits.

Pontotoc County

Magnolia Petroleum Co. No. 8 Shaffer, SE SE NW Section 25-2-6, twin well in the Fitts field, Pontotoc County, was completed for 70 bbl. of oil daily at 2,657 ft., total depth.

Senora Oil Co. No. 1 Roberts, SW SW SW Section

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31-5-5, Bebee area, was drilling below 1,352 ft. Oscar Hatcher No. 1 Sutton, NE SE NE Section 24-5-4, had dug pits. Simpson-Roodhouse Drilling Co. No. 2 Statler, SE SW SW Section 34-2n-7, Fitts field, was drilling below 1,510 ft.

Seminole County

An 8-bbl. well was completed in the Tyrola area, Seminole County, at J. F. Smith and others No. 1 King, NE NE SW Section 4-5-6. It topped Viola lime at 3,065 ft., was bottomed at 3,260 ft. and plugged back to 3,150 ft.

F. W. Cooper Drilling Co. No. 2 Cosar, NE NW SW Section 12-6-5, was dry and abandoned at 3,005 ft., total depth.

First reports of new operations in Seminole County: Eason Oil Co. No. 2 Fish, SW SW SE Section 19-7-8, Fish pool, cellar and pits; Thompson Brothers No. 1 Churchill, NW NE SW Section 7-7-8, Wewoka district, location; Sunray Oil Co. No. 10 Cully, NE SW NE Section 18-5-8, Allen district, rigging up rotary; Superior Oil Co. No. 1 Clipper, NW NE NW Section 13-6-5, Grayson pool, location; H. B. Smith No. 1-A Norvell, NW SW NW Section 29-6-6, cellar; Ellison, Grimes and others No. 1 Wooten, NE cor. Section 3-5-5, location.

Okfuskee County

Shell Oil Co. No. 3 Gahagan, SW NE NW Section 11-11-8, Dill pool, Okfuskee County, topped Cromwell sand at 3,348 ft., total depth 3,394 ft., and flowed 843 bbl. of oil in 24 hours.

Summit Drilling Co. had spudded at a well in C N½ SW Section 18-10-11. Shell Oil Co. No. 3 Keys, NW SE NW Section 11-11-8, Dill area, was drilling below 220 ft. Stekoll and others No. 1 Finks, NW SE NW Section 25-10-11, Weleetka district, was a location.

Creek County

Berry Brothers No. 1-A Lamons, C SE SE Section 4-14-10, Slick field, Creek County, found Dutcher sand at 2,690 ft., total depth 3,282 ft., plugged back to 2,698 ft. and had initial daily yield of 17 bbl. of oil.

Martin and others No. 2 Dorks, SE NW NW Section 28-14-10, had Prue sand at 1,750 ft., was bottomed at 1,798 ft., was shot with 140 qt., and produced 90 bbl. of oil in 24 hours.

Jordan & Thompson No. 1-A Hawkins, NE NW NW Section 25-15-10, was completed for 75 bbl. of oil daily from Dutcher sand topped at 2,525 ft., total depth 2,554 ft.

Freeland and others No. 1-A Polson, NW NW NW SE Section 11-17-9, topped Prue sand at 1,871 ft., was bottomed at 1,940 ft., and completed for 15 bbl. of oil daily after treating with 3,500 gal. of acid.

Johnson Oil Refining Co. No. 3 Finley, NW NE NW Section 27-20-9, had Bartlesville sand at 2,025 ft., total depth 2,071 ft., plugged back to 2,048 ft., was shot and produced 42 bbl. of oil daily.

Dunn & Miller No. 1 Anthis, SE NW SE Section 34-14-10, was a location. H. F. Worley No. 1 fee, NE SW SE Section 34-14-10, was a location.

Okmulgee-Tulsa Counties

A 6-bbl. well was completed in the Bald Hill area, Okmulgee County, at Dodge No. 16 Payne, CSL SE SE Section 17-15-14, at total depth of 852 ft.

F. D. Misener No. 2-A Jefferson, NE SW SW Section 22-15-14, pumped 4 bbl. of oil daily at total depth of 1,725 ft.

E. M. Grandfield No. 7 Sells, CNL NW SW Section 9-14-15, Tuskegee area, Okmulgee County, was dry and abandoned at 1,740 ft., total depth.

Stewart & Scott No. 5 Perkins, C SE NW Section 5-17-14, Tulsa County, was dry and abandoned at 1,507 ft., total depth.

(Continued on Page 101)

Gulf Coast Fields

(Continued from Page 76)

Harris County

Fairbanks field: Noble & Baker No. 2 Hillegeist, sand 6,824-33 ft., 121 bbl, ⅛-in. choke. Stanolind Oil & Gas Co. No. 2 Jahnke, sand 6,818-46 ft., 135 bbl., ⅛-in. choke. Friendswood field: Humble Oil & Refining Co. No. 10 Beamer, 6,048 ft., 600 bbl., ¼-in. choke. Humble Oil & Refining Co. No. 27-B Humble-West, sand 5,681-6,045 ft., 589 bbl., ¼-in. choke. Humble Oil & Refining Co. No. 2 West Production Co. and others, sand 5,485-6,048 ft., 601 bbl., ¼-in. choke. Tomball field: Amerada-Stanolind Oil & Gas Co. No. 2 Juergens, sand 5,559-86 ft., 481 bbl., ¼-in. choke.

Jackson County

Cordele field: H. J. Porter and others No. 4 Drushel, sand 2,713-18 ft., 279 bbl., ¼-in. choke.

Jefferson County

Fannett field: Gulf Oil Corp. No. 20 Thomas, perforated casing 7,660-90 ft., distillate well.

Liberty County

Esperson field: General Crude Oil Co. No. 2-B Esperson, perforated casing 6,993-7,015 ft., 510 bbl., ¼-in. choke. Hardin field: Humble Oil & Refining Co. No. 2-B Partlow, sand 7,554-80 ft., 438 bbl., ¼-in. choke. Hull field: Republic Production Co. No. 165 Dolbear, sand 1,673-98 ft., 76 bbl., pumping.

Matagorda County

Markham field: Hamill and others No. 2-H Ryceade, sand 3,730-65 ft., 24 bbl., pumping.

Orange County

Orange field: Union Producing Co. No. 5 Lutcher Moore, 7,304 ft., abandoned. Port Neches field: Texas Co. No. 14 Kuhn, sand 5,911-36 ft., 183 bbl., ¼-in. choke.

Polk County

Segno field: Gulf Oil Corp. No. 18 Wing, sand 8,082-8,102 ft., 631 bbl., ¼-in. choke.

Wharton County

Kubela field: Gilcrease Oil Co. No. 4 Kubela, sand 4,687-99 ft., 109 bbl., 6/64-in. choke. Louise field: Gulf Stream, Inc., No. 5-A Whiteside, sand 5,130-62 ft., 325 bbl., ¼-in. choke. Magnet field: Humble Oil & Refining Co. No. 12 H. C. Cockburn, sand 5,528-39 ft., 64 bbl., ⅛-in. choke. Withers field: Smith & McDannald No. 1 Macomber-Broussard, sand 5,486-5,547 ft., 456 bbl., ¼-in. choke. Texas Co. No. 9 Broussard, 5,545 ft., 112 bbl., ⅛-in. choke.

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Fig. 170 400-lb. Test — Fig. 187 700-lb. Test — Fig. 177 1000-lb. Test — Fig. 192 1600-lb. Test

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Michigan Field Report

By
O. C. PRESSPRICH

Pure's 8,760-Bbl. Well Led in Week of Big Completions

SAGINAW, Mich., May 22.—Oil development in Michigan the past week spurted to a new high. New oil wells increased potential daily output to 21,500 bbl., the biggest daily jump this year. The Redding pool of Clare County reasserted its importance in the industry as Pure Oil Co. brought in a well ranking with the largest ever completed in Michigan. The week's completions, not including four abandoned locations, set a record for the year, totaling 37; there were 17 new oil wells, an equal number of dry holes, and three new gas wells with a combined capacity of nearly 20,000,000 cu. ft. a day. In addition, the rush for new drilling permits continued, the 41 authorizations granted by the state Conservation Department equaling the record for the year, set the previous week.

Pure Oil's big well, No. 2 F. E. Davis, in Section 33 of Redding Township, got natural production rated at 8,760 bbl. a day. In the heart of the field, it was an east offset to the week's second biggest completion, Socony-Vacuum Oil Co. No. B-2 L. G. Fell, good for 3,000 bbl. daily. Pure Oil also completed No. B-7 James S. Bicknell in Section 28 of Redding Township for a natural production of 1,320 bbl. a day. Mammoth Producing & Refining Co. got a small commercial well in Freeman Township, Clare County. All told, the four new wells in Clare County jumped the daily potential for the closely controlled Central Michigan field by more than 13,000 bbl.

Southwestern Activity

Drilling activities and completions, as usual, were largely in the southwestern part of the state. It was a good week in the Salem field in Allegan County as four completions, all commercial wells, had a combined production of 2,250 bbl. a day. Best of the lot was Socony-Vacuum No. 4 Charles Weber in Section 11, rated for a natural production of 800 bbl. a day. Socony-Vacuum and Chapman Oil Co. also had two other completions in the same section, both of which were acidized with the result that their production was boosted to 600 bbl. each. In nearby Section 15, Michigan Devonian Petroleum Co. got a 250-bbl. well.

In an Buren County, the week's record showed eight new producers, 10 dry holes and four locations abandoned. Best results were obtained in Columbia Township where four oil wells were reported and only two failures. In Bloomingdale it was 50-50, three producers and three dry holes, while in Bangor one producer was brought in and two dry holes. Wildcat or semiwildcat developments elsewhere in the Van Buren area brought no results; they were in Decatur, Lawrence and Pine Grove townships.

Best of the Columbia producers of the week is the J. W. McIntosh No. 2 Roy Henry, rated at 960 bbl. a day naturally. It is in Section 12 where Daily Crude Oil Co. completed No. 1 William Teal, acidizing to increase production to an estimated 1,000 bbl. a day. Clapsaddle & Harris, developing Section 18, completed No. 3 Locher which produced 600 bbl. a day naturally. The fourth in the list, an unimportant well, Springer Brothers No. 1 A. Ford, was good for only 15 bbl. a day.

C. C. Goff interests developed one of the most important wells in the Bloomingdale Township field. Their No. 5 William Miller, in Section 24, produced 1,800 bbl. a day naturally. The Goff interests also completed No. 3 William Miller, in the same section, acidizing to boost production to 500 bbl. Bloomingdale Development Co., operating in Section 18, got a well rated at 500 bbl. a day, natural production.

New drilling permits provide for nine tests in Columbia, six in Bloomingdale, two in Bangor, one in Porter, one in Arlington, a total of 19 for Van Buren County alone. Ten are for Kent County, six in Walker Township, three in Wyoming, one in Alpine, four are for Allegan County and the rest are for tests in Clare, Montcalm, Barry, Gladwin, Arenac and Ogemaw counties.

Allegan County

Otsego Township (1n-12w)—C. W. Teater abandoned as a dry hole at a total depth of 1,515 ft. No. 1 Martindale, SW SW SW Section 29.

Salem Township (4n-13w)—The week's four completions in the Salem pool rated 100 per cent as producers, the best being the Socony-Vacuum Oil Co. No. 4 Charles Weber, NW NE NW Section 11, 800 bbl. a day, naturally. Completion depth was 1,596 ft. Socony also completed No. 1 T. Weber, SW NW NE Section 11, which is good for 600 bbl. daily, having been acidized at a total depth of 1,591 ft. Practically identical results were obtained by Chapman Oil Co. with the third completion in Section 11, No. 2 T. Weber, NE SW NE, which was completed at 1,597 ft. The fourth producer is the Michigan Devonian Petroleum Co. No. 2 Green, SE SW SE Section 15, acidized to 250 bbl. a day, total depth at 1,575 ft.

Trowbridge Township (1n-13w)—W. Spencer Cook No. 1 John Stegeman, SW SW SW Section 15, was a dry hole and abandoned at 1,410 ft.

Arenac County

Clayton Township (20n-4e)—W. E. Ross completed a small gas well. No. 1 G. Dobber, C NE NW Section 15, was gaged at 3,650,000 cu. ft. a day. Depth of the well is 1,264 ft.

Barry County

Orangeville Township (2n-10w)—American Drilling Co. abandoned as dry its exploratory test, No. 1 Ferris L. Brown, NW NW NW Section 23, which was drilled to a depth of 2,212 ft.

Prairieville Township (1n-10w)—The Robert LeBlanc No. 1 L. W. Nottingham, SW SW SE Section 9, was dry and abandoned at 1,906 ft.

Clare County

Freeman Township (18n-6w)—Mammoth Producing & Refining Co. acidized No. 2 A. E. VanHorn, SW NE SE Section 3, to bring production to 150 bbl. a day. The well's depth is 3,906 ft.

Redding Township (19n-6w)—Pure Oil Co. increased the potential of its extensive Clare County holdings by more than 9,000 bbl. a day with two completions, one of which ranks not far below the best in Michigan. Socony-Vacuum Oil Co. also completed an excellent well in that area. Rowmer Corp. and Gordon Oil Co., on the other hand, recorded a failure as they abandoned as dry their No. 1 William R. Spencer, S½ SE SE Section 21, after going down 3,905 ft. Completed at 3,899 ft., Pure Oil No. B-7 James S. Bicknell, S½ NW SE Section 28, was rated a natural producer good for 1,320 bbl. daily. Natural production of Socony's No. B-2 L. G. Fell, E½ W½ NE Section 33, was announced as 3,000 bbl. a day, the well being completed at 3,898 ft. The big Pure Oil Co. well, east offset to the Socony success, flowed naturally for a daily total of 8,760 bbl. It is No. 2 F. E. Davis, W½ E½ NE Section 33, completed at 3,910 ft.

Ionia County

Portland Township (6n-5w)—Getting no results after drilling to 2,870 ft., J. E. Drury abandoned as dry No. 1 W. S. Keefer, C E½ SW SE Section 15. It was a wildcat.

Kent County

Walker Township (6n-12w)—No. 1 Jacob Sagman, SW NE NE Section 6, a Robert W. Atha undertaking, turned out a dry hole, the drilling being stopped at a depth of 1,264 ft. Smith Petroleum Co., completing No. 2 John Livingston, SW SE SE Section 32-7n-12w, at 1,893 ft., after it was acidized, produced 400 bbl. daily.

(Walker Township's boundary line follows a river bend, which accounts for two town range descriptions.)

Montcalm County

Home Township (12n-6w)—Completed at 1,305 ft., Leslie T. Barber No. 1 John Hanson, SE NW SE Section 21, a gas well, produced at a daily rate of 7,185,000 cu. ft.

Winfield Township (12n-9w)—Taggart Brothers, Inc., brought in a gas well gaging production of 8,800,000 cu. ft. a day. It is No. 1 Schnick-Briggs-Oleson, C SE Section 7, completed at 1,115 ft.

Van Buren County

Bangor Township (2s-16w)—Truss, Brown & Rose abandoned No. 1 Omer Baird, NE SE NW Section 20, as a dry hole at 1,037 ft. Blood & Hendershott were getting 300 bbl. naturally per day from No. B-1 Carl Starz, NE SW SW Section 21, completed at a depth of 1,004 ft. Whitehill & Drury No. 1 S. Martindale, NE SE NW Section 34, was dry and abandoned at 1,009 ft.

Bloomingdale Township (1s-14w)—Three good wells, three dry holes, two locations abandoned comprised the week's experiences in Bloomingdale. Chris Schrauben abandoned at 1,351 ft. No. 1 Wilford Joy, NE NW NE Section 4. Locations abandoned were those of the White Star Drilling Co. No. 1 Harold Varrill, NW SW NE Section 8, and N. R. Dodd No. 1 Murl Moore, NE NW NW Section 18. Columbia Oil & Gas Co. and others No. 2 Fred W. Banks, SW SW SE Section 11, a dry hole, was abandoned at 1,368 ft. Bloomingdale Development Co. completed No. 2 Rosa E. West, NW NE NE Section 18 at 1,230 ft. Natural production was 500 bbl. daily. C. C. Goff interests completed No. 3 W. E. Miller, SE NW NE Section 24, at 1,352 ft. After it was acidized the well's production was 500 bbls. a day. Goff interests also announced one of the best completions in the Bloomingdale field, No. 5 Miller, NE SW NE Section 24, which produced naturally at 1,800 bbl. daily. Its depth is 1,354 ft. The Gordon Oil Co. No. 1 Peterson, NE NW SW Section 24, was dry and abandoned at 1,335 ft.

Columbia Township (1s-15w)—The Columbia field had six completions and one abandoned location. Walter A. Millikan No. 1 Roy Stockton, SE SW SE Section 1, was dry and abandoned at 1,172 ft. N. R. Dodd abandoned location for No. 1 Minnie Ruess, SE SE SE Section 12. Daily Crude Oil Co. No. 1 William Teal, SW NE NW Section 12, was completed at 1,180 ft., producing 1,000 bbl. per day after it was treated with acid. Springer Brothers No. 1 A. Ford, NW NE SW, was barely commercial, acidizing of the well bringing output to only 15 bbls. a day. J. W. McIntosh got the prize well of the lot when No. 2 Roy Henry, SE NW NW, was rated naturally as good for 950 bbls. per day. Its depth is 1,182 ft., that of the Springer Brothers well 1,187 ft. Clapsaddle & Harris completed No. 3 Locher, SE SE SW Section 13, at 1,181 ft. Natural production was 600 bbl. a day. J. E. Devine and Harry Stroud abandoned No. 1 Louis Eastman, SW SW SE Section 24, the test failing to show oil after 1,195 ft. of drilling.

Decatur Township (4s-14w)—Guy W. Obenauer abandoned the wildcat No. 4 A. D. Vought, NW NE SE Section 32, at 1,002 ft. after failing to get a show of oil.

Lawrence Township (3s-15w)—An exploratory test was abandoned at 1,081 ft. by D. E. Hughes and R. T. Rand. The attempt was on the William Brown farm, SE SE SE Section 34.

Pine Grove Township (1s-13w)—Russell W. Cooper abandoned location for the contemplated No. 1 A. Brown test, NE SE SW Section 19, as the Meredith & Fox test, the No. 1 Agnes Phillips, SE NW NW Section 19, was a failure, drilling having been stopped at a depth of 1,366 ft.

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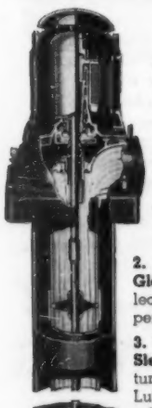

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Among the Drilling

LEWIS & MEYERS, Sayre, Okla., drilled a wildcat discovery well which promises to be a pool opener in the area northeast of Hobart, Kiowa County, in southwestern Oklahoma. This test, which has been the outstanding development in the state during the past week, has been drilled for Gled Oil Co. and Russell S. Tarr on farmout acreage. The well is No. 1 Watkins, SW SW NW Section 20-7-17w, Kiowa County. It has been drilled with cable tools and is bottomed at 1,055 ft. in what is believed to be the Viola lime. It is reported that 7,000 bbl. has flowed into tanks and earthen storage during the past week while work was being done on the well. Operators are running tubing and packer in another attempt to shut in the well. It flowes 80 to 100 bbl. per hour by heads.

RINE DRILLING CO. No. 1 King, SE NW NE Section 29-31-4, Cowley County, Kansas, wildcat, had the siliceous at 3,414 ft., total depth 3,440 ft., with light show of oil.

ROBEY DRILLING CO. is preparing to resume work on Hintze No. 1 Wright in Section 30-36n-63w, Niobrara County, Wyoming. The test reached a total depth of 4,898 ft. and had some hole trouble during the middle of the winter and was snowed in. It has been shut down several months because of the weather and while waiting on orders. This company also had three rigs busy in the Salem, Illinois, field drilling for Ohio Oil Co. and Texas Co. in Section 33-2n-2e.

KIRK-GREENWAY No. 1 Kautz, NW SW SE Section 6-18-2, northeast of the Ramsey field, Payne County, Oklahoma, had the Checkerboard lime at 3,775 ft. and was drilling at 3,797 ft., checking higher than the farthest north Ramsey pool producer.

FAIN DRILLING CO. and others No. 1 Wertman, SW SW SW Section 12-15-4, north of Chandler, Okla., on a farmout from the Continental Oil Co., had the Hogschooter at 2,530 ft., the Checkerboard at 2,850 ft. and was drilling below 3,318 ft., expecting the Prue.

TARGET DRILLING CO. No. 1 Jones, NE NW NE Section 11-8-6, Bowlegs area, Seminole County, Oklahoma, had the Sylvan shale at 4,030 ft., and was drilling below 4,070 ft.

COMMERCIAL DRILLING CO. No. 2 Church, NE NW NW Section 13-6-5, Grayson area, Seminole County, Oklahoma, had Earlsboro sand at 2,845-91 ft., shot with 40 quarts, and was doing an estimated 100 bbl. of oil daily.

AL BUCHANAN has moved one of his rotaries to the Robinson Lake area in the extreme southern part of Chambers County, Texas, for a 9,000-ft. wildcat to be drilled for the Plymouth Oil Co. The well is on the Wilburn lease in the William Moore Survey, which was obtained from the Sun Oil Co. on a farmout lease.

PATRICK & TYRELL DRILLING CO. are drilling in shale below 5,700 ft. on their No. 1 Kirby Lumber Co., a projected Wilcox test in the Ace field, Polk County, Texas.

GEORGE ECHOLS is rigging up for Earl Hankamer No. 1 Rowlan, southeast of the discovery well of the Aldine field, Harris County, Texas. One producer was completed in the League City field for himself, while in coastal Louisiana, a rig is being moved to the University field, East Baton Rouge Parish, where locations have been made for two wells, north and northeast of production.

ROWAN & HOPE are preparing to test No. 1 W. I. Cameron, a semi-wildcat north of the Rincon field, Starr County, Texas, which was drilled jointly with the Transwestern Oil Co. The hole is bottomed at 4,216 ft., and casing was cemented on bottom, preparatory to testing oil sand at 4,155-60 ft., which showed pipe line oil on a recent drill-stem test. In Hidalgo County, drilling continues at their No. 1 Antonio Bazan.

SMITH & McDANNALD abandoned their No. 2 A. P. Haury at 3,511 ft. The well was on the southwest flank of the Danbury dome, Texas. North of the Magnet-Withers field, No. 1 Marti, S. Castleman Survey, is drilling below 2,000 ft., while in coastal Louisiana and on the southwest flank of the Jennings dome, Shell Oil Co., Inc., is completing a well.

CRON & GRACEY are preparing to retest their No. 2 Dreier located in the Maetze area, Goliad County, Texas. The well was tested through perforated casing at 5,566-70 ft., and showed salt water. Other sands were logged by an electrical survey from 5,200 to 5,500 ft. In Wharton County, contract was received from

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THORNHILL-CRAVER CO., INC.
HOUSTON, TEXAS

Moore & Ahren for No. 1 Mauritz, a wildcat located in the Beatty, Seale and Forewood Survey, Section 5.

MILHOAN DRILLING CO., Tulsa, has staked a wildcat test ¾ mile to the northwest of production on the eastern edge of the Denver field of Yoakum County, West Texas. While northeast of the eastern edge of the pool, the wildcat is slightly over 1 mile southeast of the Texas Pacific Coal & Oil Co. No. 1 Brownfield, wildcat producer 1½ miles north of the Denver area proper. Milhoan has located the test, which is to be No. 1 Willard, 440 ft. from the south and east lines of the southeast quarter of Section 803, Gibson Survey.

OSAGE DRILLING CO. and Atlantic Refining Co. have extended the pay limits ¼ mile west in the northwest extension area of the Seminole area, Gaines County, West Texas. The operators' No. 2 Tippett has been completed for 1,012 bbl. of oil in 24 hours from pay at 5,100 ft. to 5,260 ft.

CARL B. KING DRILLING CO., Dallas, Tex., and Forest Development Corp., Abilene, Tex., have staked location for their third wildcat test in Stonewall County, West Texas. Test will be No. 1 Moreland, Section 183, Block D, H.&T.C. Survey, 6 miles east of the two-well Carlisle pool opened last summer. Operators have abandoned their second wildcat test in the area, it being No. 1 Ellison, Section 114, after drilling to 3,695 ft. on a contract depth of 5,000 ft.

HELMERICH & PAYNE, Tulsa, have opened the second oil pool since the start of the year for Stonewall County, West Texas. The pool opener is the old abandoned Forest Development Corp. No. 1 Boyd, Section 45, Block D, H.&T.C. Survey, 7 miles northeast of Aspermont. The test was capped by Development Corp. a few weeks ago after the possible pay section proved unproductive. About a week ago the test was noticed to have spouted oil over considerable surrounding land due to a leak in the tubing running to a storage tank which had been erected on the lease. The test was acquired by Helmerich & Payne and has been completed for 188 bbl. of oil and 33 bbl. of water in 24 hours' pumping.

JOE ROGERS, Amarillo drilling contractor and wildcatter, is preparing to drill a wildcat test in Howard County, Arkansas. The block, consisting of 12,000 acres, lies in a northwest trend from the old Smackover field. Contract depth will be 4,500 ft., and it will be drilled with cable tools. Location is in Section 7-8e-29s. Rig is up and drilling will start in the next few days.

BOSWORTH DRILLING CO., Odessa, is moving in a large, Diesel-powered rotary for the drilling of an Ordovician test in Pecos County, West Texas. Floyd C. Dodson, San Angelo consulting geologist and oil operator, has taken over Trans-Pecos Oil Co. and J. D. Young Co. block in western Pecos County and has let contract to Bosworth for deepening the No. 1-A Popham, now bottomed at 1,435 ft., to the Ordovician level. No. 1-A Popham is in Section 235, Block 11, G.H.&S.A. Survey. Rig for deepening the test is being moved from the Sand Hills field of western Crane County.

L. T. (Bobby) BURNS, Wichita Falls, Tex., has staked a new wildcat test approximately 5 miles southeast of the Browning pool of Clay County, North Texas. Burns located his No. 1 C. L. Wynn in Lot 34, H. Williams Survey, Abstract 704, 2 miles west of the community of Joy. Wildcat is contracted to 5,100 ft. and is on a block of 1,500 acres. Mr. Burns will start moving in materials at once.

DUWE & FARRIS, Wichita, Kans., at No. 1 Hurt, in NW NE NE of Section 22-19-9w, quarter of a mile eastward of the Cramm pool of Rice County, western Kansas, found the Lansing-Kansas City lime at 2,872 ft. and cored from 2,897 to 2,903 ft., with good results. This firm of drilling contractors got a 400-bbl. producer at No. 1 Pete Williams, Section 6-19s-9w, Rice County, Kansas; top of the Arbuckle was found at 3,233 ft.; total depth of the well is 3,253 ft.

HELMERICH & PAYNE, INC., at No. 1 Johnson, SE SE SE Section 2-15-1, Logan County, Oklahoma, wildcat, with the Wilcox sand at 5,246 ft., total depth 5,373 ft., was checking electrical log; well shut down for orders.

H. & M. DRILLING CO., at No. 2 LaGree, NE NW Section 31-19-1w, McPherson County, Kansas, has dug cellar and is moving in machine.

NELSON DRILLING CO., at No. 1, Hodge, in NW NE of Section 25-20-6w, southeast of Lyons, in Rice County, Kansas, was moving in rotary tools.

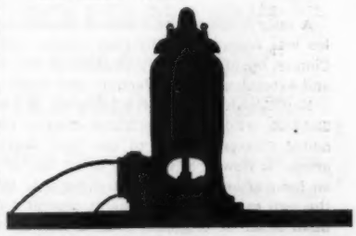
REED'S 'B-R' DRILLING BIT WITH WIRE LINE RETRACTABLE CORE BARREL

ANY NUMBER OF CORES CAN BE TAKEN (REGARDLESS OF DEPTH) WITHOUT REMOVING THE DRILL PIPE

REED 'B-R' Drill Collar and 3-Blade Drilling Bit with Core Barrel in position

HARD FORMATION HEAD (INTERCHANGEABLE WITH SOFT FORMATION HEAD)

REED ROLLER BIT CO.



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TURBINE PUMPS

Rocky Mountain Area

By
T. R. INGRAM

Chaves County Strike Flows 12 Barrels Hourly After Acid

DENVER, Colo., May 22.—Colorado had one new operation getting under way in the Florence district and a wildcat spudding in Moffat County. There were no completions.

Two outpost wells in the Leo sand were completed in Lance Creek, Wyoming, the Minnelusa Oil Corp-MacKinnie Oil & Drilling Co. No. 5 Thompson, which extends the productive area ¼ mile to the west, made 85 bbl. per hour from the Leo sand, and the Continental Oil Co. No. 2 Emil Rohlff, ½ mile ahead of Leo production on the north, made 65 bbl. an hour. The General Petroleum Corp. No. 1 Government, discovery well in the Lakota at Cole Creek, tested 100 bbl. per day in the Dakota, above the Lakota, upon plugging back to see what upper sands would do. Three old wells in Park County, two at Frannie and one at Badger basin were deepened and increased production. The Texas Co. No. 3-F, La Barge field, pumped 61 bbl. first 19 hours at 843 ft. Sinclair-Wyoming Oil Co. No. 83-F, Lost Soldier field, made 128 bbl. in 12 hours from the Sundance. Two new operations were reported, one in Garland district, by the Ohio Oil Co., and one in Lost Soldier by the Sinclair-Wyoming Oil Co.

In Montana there was one completion in Cut Bank in Tarrant-McLellan No. 3 McLellan, which swabbed 150 bbl. first 16 hours. Only one new operation was reported. The Zodiac Oil Co. is preparing to test showing of oil in Madison lime in a Teton County wildcat.

NEW MEXICO

A busy week in the fields of southeastern New Mexico was featured by the first wildcat strike in Chaves County, opening of a new productive area in Lea County, and extensions of the Vacuum and South Eunice pools.

Nay Hightower No. 1 Billingslee, C SW NE Section 28-11-30, wildcat in the Three County Corner district, added Chaves County to the New Mexico producing areas. It flowed at the rate of 12 bbl. of 31-gravity oil an hour after acidizing with 1,000 gal. Production was through casing perforations at around 3,414 ft. in Permian lime. It originally was drilled to total depth of 3,445 ft. and plugged back to 3,430 ft. It is located on a trend northwest from production in the Vacuum field, Lea County. Work was started at two other wildcats in the same district. Western Minerals, Inc., and Ted Weiner No. 1 Dow, C SW NW Section 27-10-30, had spudded and was below 300 ft. R. M. Baker No. 1 Baker Permit, NW NW NW Section 19-10-30, was building road.

The Lea County strike was at Continental Oil Co. No. 1 Lynn A-28, C SW NE Section 28-23-36, between the Cooper and Lynn pools in the southeastern part of the county. It had sand pay at 3,633-40 ft., and at 3,642 ft. flowed 61 bbl. of oil an hour, with 2,890 cu. ft. of gas. Lime pay was found at 3,654-59 ft., and when tested at 3,668 ft. it flowed 450 bbl. of oil in 1 hour naturally between casing and drill pipe. Later, 2-in. tubing was set at 3,659 ft. and it flowed 71 bbl. of oil an hour for 3 hours through ¾-in. choke, with gas gaging 887,000 cu. ft. daily. Temporarily classed as a pool opener, it is expected eventually to prove the connecting link between the Cooper and Lynn pools. It was completed at total depth of 3,668 ft.

The Vacuum field in Lea County was extended ¼ mile eastward at Drilling & Exploration Co. No. 1-W State, NW NW SE Section 26-17-35. It flowed 350 bbl. of oil in 7 hours through choke on 2-in. tubing set at 4,572 ft. Pay was found at 4,350 ft., and the well was bottomed at 4,585 ft.

The southern part of the northeast extension of the South Eunice pool was extended ¼ mile west at Texas Pacific Coal & Oil Co. No. 15-A State, C N½ SE NW Section 11-22-36. It topped pay at 3,720 ft., total depth 3,856 ft., and plugged back to 3,851 ft., then flowing 203 bbl. of oil in 24 hours through open tubing, with little gas.

Other Lea County completions were:

Shell Oil Co., Inc., No. 2-N State, C SE NE Section 28-17s-35e, Vacuum area, had pay at 4,435 ft., total depth 4,660 ft., and flowed 459 bbl. of oil in 24 hours, naturally, with 466,000 cu. ft. of gas daily.

Phillips Petroleum Co. No. 5 Hale, C NW SE Section 35-17s-34e, topped pay at 4,096 ft., total depth 4,699 ft., and after setting tubing at 4,696 ft., flowed 325 bbl. of oil in 13 hours. Gas gaged 565,000 cu. ft. daily.

Humble Oil & Refining Co. No. 5-K State, C SE NE Section 32-17s-35e, flowed 20½ bbl. of oil an hour in an 8-hour test through tubing set at 4,640 ft. Pay was topped at 4,400 ft., total depth 4,660 ft.

Phillips Petroleum Co. No. 29 Santa Fe, C SW NW Section 33-17s-35e, had pay at 4,300 ft., total depth 4,634 ft., and swabbed 90 bbl. of oil in 3½ hours, then flowed 150 bbl. in 7 hours. On initial potential test it flowed 184 bbl. in 6 hours.

Shell Oil Co., Inc., No. 1-T State, C NE SE Section 33-17s-35e, flowed 54 bbl. of oil an hour naturally. Pay was topped at 4,460 ft., total depth 4,640 ft.

Amerada Petroleum Co. No. 2 Johnson, C SW SW Section 27-24s-37e, Mattix area, was completed in lime and sand at 3,493 ft., total depth. Best pay was topped at 3,455-70 ft., in sand. The well flowed 264 bbl. of oil in 12 hours with 422,000 cu. ft. of gas daily.

Schermerhorn Oil Co. No. 6 Woolworth, C SW SE Section 28-24s-37e, was bottomed in sand at 3,550 ft., and flowed 236 bbl. of oil in 3 hours from pay found at 3,460 ft. Gas gaged at 2,000,000 cu. ft.

Cities Service Oil Co. No. 2 Dabbs, SW SW NW Section 23-25s-37e, Langlie pool, was bottomed in lime at 3,360 ft., had pay at 3,260 ft., and flowed 320 bbl. of oil in 12 hours.

Eddy County had one completion. J. E. Hughes No. 2 Brooks, NE NW NW Section 19-17s-28e, was drilled to 606 ft. in sand and lime and was abandoned when the hole filled with sulfur water.

Lea County

Carper-Taylor No. 1 Taylor (wildcat), SW SW SW Sec. 30-16-32. T.D. 4,097 ft.; P.B. 4,050 ft.; est. 10 B.O.P.D.
Magnolia Pet. Co. No. 1-Q State, C SW NE Sec. 36-16-36. T.D. 5,110 ft.; 2,700 ft. F.I.H.
Magnolia Pet. Co. No. 1-S State, C NE SW Sec. 34-16-34. R.U.S.T. 4,350 ft.
Repollo Oil Co. No. 2 State, Lse. 182, C S½ NE SW Sec. 31-16-37. T.D. 4,108 ft.; to kill well; gaged 9,500,000 cu. ft. air.
Skelly Oil Co. No. 1-O State, C E½ SW SW Sec. 31-16-37. Drlg. 4,275 ft.
Carper Drlg. No. 1 Simon, C NE NE Sec. 29-17-32. W.O.C. 3,541 ft.
Drlg. & Exploration No. 1-C State, C W½ SE SE Sec. 24-17-34. Drlg.
Drlg. & Exploration No. 2-M State, SW NW SE Sec. 26-17-35. Drlg. 2,688 ft.
Drlg. & Exploration No. 1-W State, NW NW SE Sec. 26-17-35. T.D. 4,595 ft.; F. 51 B.O. in 1 hr.
Humble O. & R. Co. No. 5-K State, C SE NE Sec. 32-17-35. W.O.C. 4,660 ft.
Humble O. & R. Co. No. 6-K State, C SE SE Sec. 32-17-35. C.&P.
Paul Love No. 3 Pearsall, C NW NW Sec. 33-17-32. Loc.
Magnolia Pet. Co. No. 1 Selby, C NW NE Sec. 7-17-37. Drlg. 4,656 ft.
Magnolia Pet. Co. No. 1-R State, C NW SE Sec. 1-17-36. S.O. 3,274 ft.; drlg. 4,665 ft.
Magnolia Pet. Co. No. 31 State-Bridges, C NE NW Sec. 23-17-34. Drlg. 4,263 ft.
Magnolia Pet. Co. No. 32 State-Bridges, C NE NW Sec. 25-17-34. Drlg. 3,510 ft.
Magnolia Pet. Co. No. 33 State-Bridges, C NW SE Sec. 26-17-34. Drlg. 3,450 ft.
Maljamar O. & G. Co. No. 2-B Baish, C NE NE Sec. 27-17-32. S.S.O. 3,868 ft.; drlg. 3,898 ft.
Maljamar O. & G. Co. No. 2 Mitchell, SW SE SW Sec. 5-17-32. Drlg. plug 3,406 ft.
Ohio Oil Co. No. 2 State-Warn, C SE NW Sec. 33-17-35. Drlg. 4,257 ft.
Ohio Oil Co. No. 2 State-Shugart, C NW SE Sec. 34-17-34. Drlg.
Phillips Pet. Co. No. 5 Hale, C NW SE Sec. 35-17-34. S.D.; rprs. 4,616 ft.
Phillips Pet. Co. No. 29 Santa Fe, C SW NW Sec. 33-17-35. T.D. 4,634 ft.; rng. tbg.
Shell Oil Co. No. 1-T State, C NE SE Sec. 33-17-35. W.O.C. 4,270 ft.
Shell Oil Co. No. 2-N State, C SE NE Sec. 28-17-35. Drlg. 4,422 ft.
Standard Oil of Texas No. 3 State, Lse. 5, C SW NW Sec. 27-17-35. Drlg. 4,573 ft.
Texas Co. No. 3-N State, C SW NW Sec. 30-17-35. T.D. 4,750 ft.; swb. 105 B.O. in 22 hrs.
United Producers No. 1 Caylor, NE NE NW Sec. 6-17-37. Drlg. 4,698 ft.
Fullerton Oil Co. No. 1-A Walker, C SW NW Sec. 18-18-32. O.I.H.; T.D. 4,383 ft.; S.D.O.
Texas Co. No. 1-Z State, C NW NW Sec. 2-18-34. Drlg. 4,200 ft.
P.B. English No. 1 Miller, C NE SE Sec. 18-19-32 (wildcat). T.D. 3,077 ft.; S.D.
Continental Oil Co. No. 6 Britt B-15, C W½ SE NW Sec. 15-20-37. Drlg. 2,350 ft.
Continental Oil Co. No. 5 Sanderson B-14, NE NW SW Sec. 14-20-36. Drlg. 3,680 ft.
Phillips Pet. Co. No. 4 Hobbs, C SE SW Sec. 18-20-37. Drlg.
Stanolind O. & G. Co. No. 4-B Gilluby, NW NW NW Sec. 22-20-37. Fsg. D.P. 3,345 ft.
Texas Co. No. 18 Lieu Lands, C NE NW Sec. 19-20-37. W.O.C. 3,750 ft.
Aloco Oil Co. No. 2-B Carson, C NW SE Sec. 28-21-37. W.O.C. 3,631 ft.
Danglade & Clower No. 2 Owen, C W½ NW SW Sec. 34-21-37. W.O.C. 130 ft.
Drlg. & Exploration Co. No. 1-D Shell, SW SW SE Sec. 36-21-36. T.D. 3,809 ft.; F. 16 B.O.P.H.
Gulf Oil Corp. No. 1-C Carson, C NE NE Sec. 33-21-37. T.D. 3,760 ft.; acd. and F. 143 B.O. in 24 hrs.; to shoot.
Humble O. & R. Co. No. 1 Hardison, C SW NE Sec. 34-21-37. W.O.C. 453 ft.
Magnolia Pet. Co. No. 5 Carson, C SW NE Sec. 33-21-37. Drlg. 2,975 ft.
Stanolind O. & G. Co. No. 5-C Hill, C NW NE Sec. 5-21-37. Drlg. 295 ft.
Wilson Oil Co. No. 1 Shell-State, C NE SW Sec. 7-21-35. Loc.
J. C. Clower No. 1 Christmas, SE SE SW Sec. 28-22-37. Drlg. 3,475 ft.
Continental Oil Co. No. 1-A Elliott, C SE SE Sec. 21-22-37. T.D. 3,648 ft.; tstg.
Gulf Oil Corp. No. 5-E Mattern, SW SW NW Sec. 12-22-36. Drlg. 3,043 ft.
Lem Peters No. 2 Call, C W½ NW SW Sec. 26-22-37. Drlg. 3,325 ft.
Lem Peters No. 3 T. O. May, SW SW NE Sec. 34-22-37. Spd.
Repollo Oil Co. No. 2 State, Lse. 157-D, NW NE SW Sec. 12-22-36. Drlg. 2,400 ft.
Shell Oil Co. No. 1 T. O. May, NW NW NW Sec. 35-22-37. T.D. 3,622 ft.; F. 26 B.O.P.D.
Skelly Oil Co. No. 2-A Baker, SW SW NW Sec. 26-22-37. Drlg. 3,520 ft.
Skelly Oil Co. No. 8 Baker, SW NE NE Sec. 27-22-37. Drlg. 2,955 ft.
Texas Co. No. 2-B Fally, C SE SW Sec. 8-22-37. T.D. 3,720 ft.; P.B. 3,694 ft.; F. 8 B.O.P.D.
Texas Pacific C. & O. No. 15-A State, C N½ SE NW Sec. 11-22-36. T.D. 3,856 ft.; P.B. 3,851 ft.; tstg.
Texas Pacific C. & O. No. 16-A State, NE NE SE Sec. 11-22-36. Drlg. 550 ft.
Continental Oil Co. No. 1 Lynn A-28, C SW NE Sec. 28-23-36. T.D. 3,600 ft.; W.O.C.
Great Western Prod. No. 3-B Leonard, SW NE NW Sec. 32-23-37. W.O.C. 1,200 ft.
Skelly Oil Co. No. 4 Simms, SW NE SE Sec. 3-23-37. Drlg. 3,010 ft.
Addison Oil No. 4 Knight, C SE NW Sec. 27-24-37. Loc.
Anderson & Prichard No. 1-A State, C SW NW Sec. 32-24-37. T.D. 3,549 ft.; to test.
Amerada Oil Co. No. 2 Johnson, C SW SW Sec. 27-24-37. W.O.C. 3,295 ft.
Continental Oil Co. No. 1 Jack B-29, NE SE SE Sec. 29-24-37. Drlg. 1,080 ft.
Continental Oil Co. No. 3 Jack B-27, C NW SE Sec. 27-24-37. Drlg. 3,233 ft.
Humble O. & R. Co. No. 1-L State, C NE SE Sec. 32-24-37. T.D. 3,560 ft.; P.B. 3,551 ft.; swbg. 15 B.O.P.D.
Humble O. & R. Co. No. 2-L State, C SE NE Sec. 32-24-37. T.D. 3,170 ft.; to kill; est. 25,000,000 cu. ft. gas.
Kan-Mex Oil Co. No. 4 Vaughn, C SE NE Sec. 3-24-36. Drlg. 3,342 ft.
Montecito Corp. No. 2 Woolworth, NE SW SW Sec. 33-24-37. C.&P.
North Shore Oil Corp. No. 3 Woolworth, SW SW NW Sec. 33-24-37. T.D. 3,576 ft.; P.B. 3,550 ft.; to swb.
North Shore Oil Corp. No. 4 Woolworth, SE NW NW Sec. 33-24-37. T.D. 3,551 ft.; rng. tbg.
Phillips and Pure No. 7 Woolworth, C SW NE Sec. 33-24-37. T.D. 3,365 ft.; W.O.C.
Phillips and Pure No. 8 Woolworth, C NW NE Sec. 33-24-37. Loc.
Repollo Oil Co. No. 2-C State, Lse. 157, NE SE SE Sec. 32-24-37. T.D. 3,621 ft.; P.B. 3,593 ft.; H.F.F.
Repollo Oil Co. No. 4-B Whitten, NE NE SE Sec. 4-24-36. Drlg. 3,723 ft.
Schermerhorn Oil Co. No. 5 Woolworth, NW SW NE Sec. 28-24-37. T.D. 3,546 ft.; drlg. by tools at 3,540 ft.
Schermerhorn Oil Co. No. 6 Woolworth, C SW SE Sec. 28-24-37. T.D. 3,550 ft.; F. 236 B.O. in 3 hrs.
Schermerhorn Oil Co. No. 7 Woolworth, C SE SE Sec. 28-24-37. Drlg.
Weiser Drlg. Co. No. 4 Woolworth, SE NW SW Sec. 28-24-37. R.U.S.T.
Anderson & Prichard No. 6 Wells, C SW NW Sec. 5-

25-37. T.D. 3,291 ft.; 5,700,000 cu. ft. gas.
Anderson & Prichard No. 7 Wells, C NW SW Sec. 4-25-37. Drlg. 3,514 ft.
Cities Service No. 2 Dabbs, SW SW NW Sec. 23-25-37. T.D. 3,360 ft.; S.&F. 12 B.O.P.H.
Ralph Olson No. 1 Langlie, SE NW NW Sec. 10-25-37. Drlg. 250 ft.
Parker Drlg. No. 1-B State, C W½ NE NW Sec. 2-25-37. Loc.
Richmond Drlg. No. 3-A State, C SE SW Sec. 2-25-37. Drlg. 2,625 ft.
Weiner et al No. 4 Smith, NW SE SE Sec. 4-25-37. S.D. rprs. 2,525 ft.
Stanolind O. & G. No. 1-B Gregory, C SW NW Sec. 15-26-37. Drlg. 651 ft.

Eddy County

Allen, Fair & Pope No. 1-A State, SE NE SE Sec. 36-17-29. T.D. 2,775 ft.; pay 2,740-60 ft.; swb. 85 B.O. while C.O.
Allen, Fair & Pope No. 2-A State, SE SW SW Sec. 36-17-29. Drlg. 1,565 ft.
B. L. Arnold No. 1 Arnold, NW NW NW Sec. 34-17-30. Drlg. 3,060 ft.
Aston & Fair, Inc., No. 1 Hudson, C NE NE Sec. 18-17-31. Drlg. 3,453 ft.; S. 25 B.O.P.D.
Flint Prod. Co. No. 1-L Dexter, SE NW SE Sec. 15-17-30. T.D. 4,339 ft.; to swb.
Friendship Oil Co. No. 1 State, SE SE SW Sec. 36-17-29. Drlg. 280 ft.
Grayberg Oil Co. No. 12 Burch, NW NW SE Sec. 19-17-30. Drlg. 2,805 ft.; 900 ft. O.I.H.
J. E. Hughes No. 2 Brooks, NE NW NW Sec. 19-17-28. Drlg. 575 ft.
C. L. Jones No. 1 Harbold, NE NE NE Sec. 26-17-27. Spd.
F. S. Keyes No. 3 State, NE SW NE Sec. 9-17-28. R.U. mch.
Nash et al No. 9-A Jackson, C N½ NW NE Sec. 24-17-30. Drlg. 2,625 ft.; S.S.O.
R. L. Newberry No. 2 Saunders, NE SE SE Sec. 13-17-27. Loc.
Plains Prod. No. 1 Daugherty (wildcat), SE SE SE Sec. 11-17-27. T.D. 395 ft.
Premier Pet. Corp. No. 1-F Beeson, SW NW SW Sec. 31-17-30. S.D. rprs. 1,925 ft.
Premier Pet. Co. No. 2-F Beason, SW SW SW Sec. 31-17-30. C.&P.
Repollo Oil Co. No. 4-A Keel, SE NE SW Sec. 7-17-31. T.D. 3,586 ft.; acd.&S. 35 B.O. in 6 hrs.
Repollo Oil Co. No. 3 West, NE NE NE Sec. 3-17-31. T.D. 3,648 ft.; 1,000 ft. O.I.H.
W. K. Royalty No. 3-B State, C NE NW Sec. 16-17-31. S.D. rprs. 2,670 ft.
H. T. Clark et al No. 1 Massie, C SW SW Sec. 27-18-29. R.U. mch.
Continental et al No. 1 Brainard, NE NE NW Sec. 11-18-19. M.I.M.
J. H. Steinberger No. 2 Hastie, SW SW SW Sec. 18-17-28. W.O.C. 462 ft.
Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. T.D. 2,002 ft.; S.D.O.
L. E. Elliott No. 1 Elliott, SE SE SE Sec. 24-18-29. T.D. 120 ft.; drlg. 545 ft.
Etz & Cone No. 1 Nelson, SE SE NE Sec. 10-18-30. T.D. 2,247 ft.; S.D. rprs.
R. W. Fair No. 1 State, NE NE SW Sec. 1-18-29. Drlg. 360 ft.
Farmer & Tallmadge No. 1 Hubbell, NE SW Sec. 4-18-25. Rng. csg. 395 ft.
Franklin Pet. Corp. No. 1 Cappedge, NW SW NW Sec. 5-18-30. Cg. 2,820 ft., L.
Green Bay-Paton No. 1 Erwin, C SW SW Sec. 9-18-31. Drlg. 2,245 ft.
Harvey E. Yates No. 1 Travis, NE SE SE Sec. 6-18-29. T.D. 2,606 ft.; F. 40 B.O.P.D.
H. W. Martin No. 1 Gates, SE SE SW Sec. 15-18-30. Drlg. 2,121 ft.
Me-Tex et al No. 1-B Ballard, C NW NW Sec. 8-18-29. Loc.
Plains Prod. No. 1 Swearingen, C NW NE Sec. 14-18-31. Drlg. 2,815 ft.
G. V. Price No. 2 Massie, SE SE NW Sec. 22-18-29. Drlg. 935 ft.
Martin Yates No. 1 Saunders, NE NE NE Sec. 12-18-29. Drlg. 2,839 ft.; 600 ft. O.I.H. 3 hrs.
Rhodes Drlg. No. 2 Swearingen, C NE NE Sec. 14-18-31 (wtr. well). Drlg.
Texwell Corp. No. 1 Sullivan, C SE SW Sec. 23-18-31. Drlg. 1,330 ft.
Underwood & Sanders No. 1 Miller, C SE NE Sec. 5-18-29. T.D. 517 ft.; W.O.C.
Me-Tex Supply Co. No. 1 State, NW NW NW Sec. 2-19-31. Drlg. 1,585 ft.
R. C. Underwood No. 1 Quillen-Bruce, NE NE SE Sec. 4-19-31. Drlg. 3,850 ft.
Trojan Oil Co. No. 1 Grant, SW SW NE Sec. 33-20s-25e. Drlg. 645 ft. (last report).
A. W. Rutter No. 1 State, SE SE NW Sec. 15-21-27. Drlg. 400 ft.

Chaves County

Mac T. Anderson No. 1 Warnock, C SW SE Sec. 17-15-27. T.D. 1,228 ft.; fsg. bit.
R. M. Baker No. 1 Baker, NW NW NW Sec. 19-10-30. C.&P.
Comanche Drlg. No. 1 Campbell, NE NE NW Sec. 15-11-26. Drlg. 1,098 ft.
Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 3,445 ft.; P.B. 3,430 ft.; acdg. and tstg.
New, Russell & Wood No. 1 Sterrett (wildcat), NW SE NW Sec. 29-11-25. W.O.C. 840 ft.
Tarkenton Bros. No. 1 Peters, SE SE NW Sec. 33-11-25. W.O. csg. 960 ft.
Western Minerals, Inc., No. 1 Dow (wildcat), C SW NW Sec. 27-10-30. Spdg.

Luna County

O. D. Berry No. 1 Berry, SE SE SW Sec. 33-22s-10w. Drlg. 300 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarita, Sec. 22-9n-1e. Drlg. below 1,200 ft.

San Juan County

Continental Oil Co. No. 91 Rattlesnake, C NW NW Sec. 1-29n-19w. Spdg. (first report).
Al Greer No. 2 Thompson, SW SE SW Sec. 10-30n-11w. T.D. 1,065 ft.; rng. 6⅝-in.
Geo. Goodrun No. 1, NE NW NW Sec. 16-30n-11w. Drlg. 980 ft.

San Miguel County

Ben E. Keith No. 1 McCune, SW SE SW Sec. 32-16n-12e. Spdg.; to go 2,500 ft.

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Southwest Drlg. Co. No. 1 Conchas, NW NE Sec. 34-17n-21e. T.D. 1,625 ft.; rerng. 10-in. to bttm.

Torrance County

Drice Co. No. 1 Garland, NE SE Sec. 32-7n-7e. Drlg. 1,860 ft.

Valencia County

C. A. Grober et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. Cg. 1,794 ft.
Joiner Oil Corp. No. 1 San Clement, C NE SE Sec. 23-7n-1e. T.D. 5,606 ft.; set whpstk.; drlg. by D.P.

COLORADO

Boulder County

J. A. Warren No. 3 Maxwell, NW NE NW Sec. 24-1n-17w. R.U.
Reynolds & Rohr No. 1 Thomas, SW SW Sec. 17-1n-70w. S.D.O. 2,138 ft.; will D.D. under management of Reynolds.

Fremont County

The Waterville Oil Co. No. 1 Persons, CWL NE NE Section 17-18s-69w, Phantom Canon, was unable to overcome water trouble and hole was plugged at 90 feet. Rig was skidded and No. 2 Persons is drilling ahead.

One new operation was reported in the Florence district.

T. E. Maloney No. 1, SE SW Sec. 34-19s-69w. Drlg. 97 ft. in 10-in. hole.
Waterville Oil Co. No. 2 Persons, CWL NE NE Sec. 17-18s-69w. Drlg. 90 ft. 10-in. at 61 ft.

La Plata County

Nick Spatter No. 1-X Bryce, C SW SW Sec. 32-33n-9w. T.D. 2,352 ft.; rerng. 8¼-in. to bttm.

Moffat County

C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.D. 1,164 ft.; res. after winter S.D.; U.R. 8¼-in. for F.S.O.
MacKinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. T.D. 3,488 ft. on top Sundance; W.O. 4¾-in.
J. S. Warner No. 1 Baker, NE NE SW Sec. 35-5n-96w. Spd. and S.D. (first report. Dry Lake dist.)

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. T.D. 6,975 ft.; fsg. blr.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek Ld. & Cattle, SW SE Sec. 29-19s-64w. Drlg. 2,105 ft.

Rio Blanco County

Texas Co.-California Co. No. 2 Unit, NW SE SW Sec. 27-3n-94w. Drlg. 646 ft.
Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. T.D. 3,645 ft.; M.I. 6¼-in. to res.

WYOMING

Big Horn County

The Ohio Oil Co. has made location for a north offset to the Yale Petroleum Corp. No. 2 Yates in its No. 1 Syverson, in Lot 53.

Ohio Oil Co. No. 1 Syverson, Sec. 34-54n-93w (SE SW NW Lot 53). R.U.R. (first report).
Frank S. Scott No. 1 Robertson, SE SE SE Sec. 6-54n-93w. Drlg. 250 ft. in Chugwater.
Yale Pet. Corp. No. 2 Yates, Lot 57 (NW SW) Sec. 34-56n-97w. T.D. 3,944 ft. in Madison; cmtd. 7-in. 3,914 ft. with 500 sacks.
Mule Creek Oil Co. No. 1 Sessions, Lot 53 (NW NW) Sec. 34-56n-97w. T.D. 3,342 ft.; wshg. over and cutting D.P.
Libby-Keoughan No. 1 Sheets, SE NE SE Sec. 9-55n-96w. S.D. 3,440 ft.
A. L. Rankin No. 1 Karjala-Rankin, C SW NW Sec. 10-54n-94w. Drlg. Amsden 755 ft.

Carbon County

Sinclair-Wyoming Oil Co. No. 13 Wertz, NE NW NW Sec. 7-26n-89w. Drlg. 1,165 ft.; 13⅜-in. at 869 ft.
Producers Oil Co. No. 1 Lake Valley, CNL Sec. 14-20n-88w. Drlg. 2,295 ft.; carrying 10-in. at 2,200 ft.

Converse County

New Era Fuel Co. No. 1 Simonson, NW NE SE Sec. 16-32n-68w. T.D. 640 ft.; prep. to run 8¼-in. to bttm.
Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. T.D. 2,580 ft.; fsg. D.P.
W. W. Austin et al No. 1 Pfister, SW NE NW Sec. 20-32n-68w. T.D. 713 ft.; cmtd. 5⅛-in. at 710 ft.; S.G. in sdy. sh. 710-13 ft.
New Era Fuel Co. No. 2 Gaspar, CNL NW SW Sec. 25-32n-69w. Cg. 750 ft.
New Era Fuel Co. No. 1 Pestal, SE NE NE Sec. 32-32n-69w. C.O. 420 ft. to run 8¼-in.; (formerly Fred Bunker).

Fremont County

Hall & Olinger No. 5 Govt., NW NE Sec. 33-38n-93w. Drlg. 254 ft.
Lincoln O. & G. Co. No. 5 Tribal, C SW NE Sec. 23-1s-1e. T.D. 492 ft.; 2 B.O.P.D. in Bentonite at 173-74 ft.; bailed 10 B.O.P.D. initial in sdy. sh. at 472-85 ft.; will D.D. 50 ft.
Pilot Oil Co. No. 8 Hoffman, C SW SW Sec. 22-3n-1w. Drlg. 230 ft.
H. Kenyon Burch No. 9 Tribal, C NW NW Sec. 27-3n-1w. T.D. 1,212 ft.; P.B. to recomp. at 732-50 ft. where it made 13 B.O.P.D. in June 1938.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. T.D. 1,245 ft.; U.R. 6⅝-in. at 800 ft.
Frank Pouppirt No. 2 Fidelity Tr., NW NW SW Sec. 27-3n-1w. S.D. 1,200 ft.

Hot Springs County

Columbus Oil Co. No. 2 Govt., SW NW Sec. 11-44n-98w. R.U.C.T. (first report. Hamilton dome).

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. 1,790 ft.

Natrona County

The General Petroleum Corp. No. 1 Government, Cole Creek district, the discovery well which was deepened to 8,511 ft. to test the Sundance, plugged back, shut off the Lakota sand, which was on production for a number of months, perforated the casing opposite the Dakota sand at 7,912-30 ft. and swabbed at the rate of 8 bbl. per hour of 37-gravity oil. It was then shut in to build up pressure after which it flowed by heads at the rate of 100 bbl. per day, estimated.

It will again plug back and test the Muddy, also a sand in the Mowry shale.

Connelly Drlg. Co. No. 1 State, SW SW NW Sec. 36-36n-8?w. T.D. 1,268 ft.; R.U.C.T. to D.D.
General Pet. Corp. No. 1 Govt., C NW SE Sec. 21-35n-77w. T.D. 8,511 ft.; P.B. to test upper formation.
Summit Oil Co. No. 2 Govt., NW NE NE Sec. 21-33n-80w. Drlg. 230 ft.

Niobrara County

Lance Creek had two good completions, both Leo sand wells. The Minnelusa Oil Corp.-McKinnie Oil & Drilling Co. No. 5 Thompson, SE SE NW Section 7-35n-65w, an outpost well on the southwest, ¼ mile west of MacKinnie No. 4 Thompson, the nearest producer, was completed at 5,452 ft. for 85 bbl. per hour from the Leo sand topped at 5,410 ft. Seven-inch casing was cemented at 5,386 ft. Elevation 4,441 ft.

The Continental Oil Co. No. 2 Emil Rohlff, NW SE NW Section 32-36n-65w, an outpost well to the north, ¼ mile northwest of the nearest Sundance producer and ½ mile north of the nearest Leo sand well, was completed at 5,400 ft. and flowed 55 bbl. per hour through the casing while cleaning itself. Flow increased and it averaged 65 bbl. per hour first 8 hours. Top of the Leo zone was at 5,330 ft., where the 7-in. casing was set. Rotary table elevation 4,404 ft.

The Fall River Royalty & Producers Co. No. 1 Government, on West Mule Creek, a deep test to the Minnelusa, has resumed operation. This dome produces from the Lakota sand at a shallow depth. Several years ago, before the Leo was found productive at Lance Creek, this company drilled a deep test which showed for a commercial well, but on account of the condition of the hole, was not satisfactory.

Continental Oil Co. No. 4 Apex-O.P.C.-4, SE SE NW Sec. 35-36n-65w. Drlg. 2,365 ft.
Continental Oil Co. No. 9 Rohlff, SE NE SE Sec. 31-36n-65w. Rig; M.I.M.
Continental Oil Co. No. 15 Tom Bell Cattle, C SW SW Sec. 34-36n-65w. Drlg. 4,339 ft.; top first Sundance 3,915 ft.
Ohio Oil Co. No. 11 Putnam, SE SE SW Sec. 33-36n-65w. Drlg. r.b. 4,122 ft.; W. in upper Sundance, top 3,845 ft.
Continental Oil Co.-Buck Creek Oil Co. No. 8-B Schuricht, SW NW SE Sec. 6-35n-65w. Drlg. anhy. and dol. 4,215 ft.
J. E. Manning No. 1 Hewitt-Govt., NW SW SW Sec. 4-35n-65w. Digging C.&P.
Continental Oil Co. No. 3-B Dielman, SW SE NW Sec. 8-35-65w. Cg. anhy. and dol. 5,486 ft.
Minnelusa Oil Corp. No. 2 Joss, SE NE SW Sec. 6-35n-65w. T.D. 5,275 ft.; cmtd. 4¾-in. at 5,149 ft.; W.O.C.
F. F. Hintze et al No. 1 Wright-Govt., C NW SE Sec. 30-36n-63w. T.D. 4,964 ft.; P.B. to 4,190 ft.; redrld. to 4,245 ft.; rng. pkr. to test Dakota.
Fall River Roy. & Prod. Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. Drlg. 1,585 ft.; 12½-in. at 1,000 ft.
Continental Oil Co. No. 1 Delahoyde, CNL NE NE Sec. 25-37n-63w. Drlg. sh. and dol. 6,414 ft.

Park County

The Continental Oil Co., which is now the principal operator in the Frannie black-oil field, recently has deepened two of the old wells with beneficial results and is now deepening a third. Its No. 1 Northern Pacific, SE SW NE Section 23-58n-98w, which was completed in February, 1933, at 3,343 ft. for 388 bbl. first 24 hours, was deepened to 3,383 ft. and recompleted for 355 bbl. in 9 hours. It is estimated at 500 bbl. per day. Its No. 2 Northern Pacific, SE SW SE Section 23-58n-98w, which was completed in 1934 at 3,290 ft. for 214 bbl. in 15 hours, was deepened to 3,317 ft. and recompleted for 295 bbl. per day. Its No. 36 Kirk-Peters, SE cor. Section 23, drilled in 1928 by the old Midwest Refining Co., is bottomed at 2,832 ft., old total depth, and is cleaning out to drill deeper.

The Resolute Oil Co. No. 3 Government, C NE NE Section 20-57n-101w, Badger basin field, which was completed in the Wall Creek at 8,675 ft. in 1938 for 8 bbl. per day, has been deepened to 8,709 ft. and recompleted for 180 bbl. in 18 hours.

Sublette County

The Texas Co. No. 3-F, SW SW NW Section 27-27n-113w, La Barge field, was completed at 843 ft. and pumped 61 bbl. in the first 19 hours.

California Co. No. 1 Unit 1, C SW NE Sec. 14-31n-109w. Drlg. 3,121 ft.
Wyo. Pet. Corp. No. 1 Budd, C NE NE Sec. 10-29n-113w. T.D. 1,695 ft.; rebldg. rig; M.I. new boiler to res.
Texas Co.-Frontier Pet. Co. No. 1 Govt. Unit, SE SE SW Sec. 1-28n-114w. Drlg. 7,800 ft.
Yellowstone Oil Co. No. 1 Budd, C SE SE Sec. 6-30n-112w. Drlg. 210 ft.

Sweetwater County

The Sinclair-Wyoming Oil Co. No. 83-F, NW NE NE Section 10-26n-90w, Lost Soldier field, was drilled to 2,180 ft. and made 128 bbl. in 12 hours from the Sundance. Location has been released for No. 84-A.

Sinclair-Wyoming Oil Co. No. 84-A, SW NW NW Sec. 11-26n-90w. M.I. rot. to go to Dakota. (first report).
Salegna Oil Co. No. 1 Union Pacific, C SW SW Sec. 10-20n-104w. T.D. 5,230 ft.; set whpstk. at 2,836 ft.

Uinta County

Drusilla Connell No. 6 Govt., C NW NW Sec. 24-15n-118w. S.D. 180 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26 14n-119w. T.D. 680 ft.; prep. to res.

Weston County

F. P. Dilger and others No. 1 Ost, CWL SW SE Section 25-46n-64w, Osage field, was dry and abandoned in sand at 1,521-49 ft.

Whedon and others No. 1, C SW NE Section 21-46n-64w, which a few weeks ago gave favorable indications of marking an extension of the Osage pool a mile to the west, only to be a dry hole when tested after running casing, is rigging up cable tools to clean out rotary mud and again test sand at 3,894-3,953 ft. It is believed the rotary mudded off the sand.

Upton Trust Co. No. 1 Hockett, NE NE Sec. 23-47n-64w. S.D.O. 300 ft.; W.
Root et al No. 1 Robey, CSL NW NW Sec. 19-45n-61w. Drlg. 240 ft.
John Brorphy No. 1 George, SW SE NW Sec. 26-48n-64w. Res. at 2,304 ft.
Lem Johnston No. 1, NW SW Sec. 24-44n-63w. T.D. 3,305 ft.; C.O.; 5-in. at 3,300 ft.
Selby & Langford No. 2, NW SE NE Sec. 6-46n-63w Drlg. 500 ft.; 8¼-in. at 40 ft.
Hunter & Saterlee No. 1, C NW NW Sec. 10-43n-63w. Drlg. 110 ft.; thru Muddy at 75 ft.
Kroker et al No. 2, CNL NE NW Sec. 31-47n-63w. Drlg. below 120 ft.
F. P. Dilger et al No. 4, CNL NE NE Sec. 25-46n-64w. Drlg. 1,500 ft.; headed for Minnelusa; through Muddy sd.

MONTANA

Carbon County

R. R. Tarrant No. 3 Govt., C SW NW Sec. 4-6s-18e. Drlg. 345 ft.
Alex Beaton No. 1, CSL SE SE Sec. 23-6s-23e. Drlg. 1,600 ft. in 8½-in. hole.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,381 ft.; fsg.; tools stk. at 1,600 ft.

Glacier County

Cut Bank had one completion and no new operations. Tarrant-McLellan No. 3 McLellan, C SW SE Section 12-34n-6w, swabbed 150 bbl. first 16 hours at 2,761 ft., total depth. The upper Cut Bank was at 2,715-47 ft., with a show of gas, and the lower Cut Bank at 2,747-57 ft.

Santa Rita O. & G. Co. No. 2 Govt. (078695-B), C SE NE Sec. 29-33n-5w. Spdg. 165 ft.
Dakota-Montana Oil Co. No. 2 Gilham, NE SE NE Sec. 3-34n-6w. Drlg. 1,410 ft.; Colo. 560 ft.; 10¾-in. 586 ft.
Texas Co. No. 2 Hessler, CSL NE NE Sec. 19-33n-5w. Drlg. 515 ft.
A. R. Pardue No. 4 Tribal-179, SE NE SE Sec. 12-32n-6w. Drlg. 1,620 ft.
Glacier Prod. Co. No. 1 Larson, CEL NE NW Sec. 35-36n-6w. Drlg. 485 ft.
Glacier Prod. Co. No. 2 Hawkins, NE NE SW Sec. 17-33n-5w. Spdg. 205 ft.
Glacier Prod. Co. No. 3 Corrigeaux, C SE SW Sec. 21-33n-5w. Drlg. 950 ft.; Colo. 625 ft.; 10¾-in. 649 ft.
A. R. Pardue No. 2 Tribal-170, NW SW SW Sec. 7-32n-5w. R.U.
R. C. Tarrant No. 4 State, SE NE SE Sec. 36-34n-6w. R.U.
A. B. Cobb No. 1 Vargo, C SE NE Sec. 19-37n-4w. Drlg. 1,850 ft.
Santa Rita O. & G. Co. No. 2 Govt., SW SW NE Sec. 7-32n-5w. Drlg. 2,575 ft.
Tarrant-Wyley No. 2 Connolly, C SW NE Sec. 31-34n-5w. Drlg. 1,100 ft.

Meagher County

Dan Drumheller No. 1 Moss Agate, SW SE NE Sec. 25-7n-7e. R.U.C.T.

Petroleum County

Nelson-Story-Hogan, Ltd., No. 1 Austed, SW NW SE Sec. 22-13n-28e. Drlg. 1,300 ft.; 10-in. at 1,275 ft.
H. Clark Rowland No. 1 Brundidge-Mink, NE SE NW Sec. 35-14n-25e. Drlg. 700 ft.; first Cat Creek sd. dry at 655-95 ft.

Teton County

Zodiac Oil Co.-Gulf States Oil Co. No. 1 Kellogg, NE NW NE Sec. 33-28n-5w. T.D. 2,846 ft.; rng. 2-in. tbg. to test sat. in Madison L.

Toole County

Kevin-Sunburst had one new operation and no completions. The Big West Oil Co. No. 9 Dalquist, an offset to No. 8, which was completed two weeks ago for 500 bbl. per day, pinched in, is showing for a good well. It topped the contact at 1,721 ft., which

(Continued on Page 92)

Southwest Texas District

By
F. L. SINGLETON

Prospect in Jim Wells and New Pettus Field in Duval

CORPUS CHRISTI, Tex., May 22.—The opening of a new Pettus sand field in Duval County; the apparent discovery of a field along the Jim Wells County sector of the Frio-Vicksburg trend, and a scheduled production test of a semiwildcat north of the Rincon field, Starr County, held the attention of operators in the Southwest Texas district the past week.

Eight miles west of San Diego, and in the T. C. Rogers Survey No. 298, J. B. Blanchard and others No. 1 A. Parr is flowing at an estimated rate of 5 bbl. of pipe line oil per hour while cleaning out through a ½-in. choke under a tubing pressure of 700 lb. and casing pressure of 350 lb. The hole is bottomed at 4,710-15 ft. The well topped the Hockley at 3,740 ft., and casing was cemented on top of the sand following a 20-minute drill-stem test at 4,710-15 ft., which recovered 375 ft. of oil, 40 ft. of oily mud and 10 ft. of salt water. Gravity of the oil tested 42.5°.

In Jim Wells County, about 1 mile southwest of Ben Bolt, Bridwell Oil Co. No. 1 W. W. Smith recovered 1,080 ft. of 42-gravity oil on a 10-minute drill-stem test at 5,231-41 ft., and casing is being cemented for a production test. Sand showing oil was cored in the Vicksburg at 5,231-41 ft., and after the drill-stem test was made the hole was cored to 5,251 ft., with the section being logged as oil sand. The drill-stem test was made through a ¼-in. choke on top and a ⅜-in. choke on bottom. Working pressure built up to 150 lbs. The well is in the La Trinidad Survey, about 2 miles southwest of two dry holes drilled last year by Early Calloway and Richardson Petroleum Co., and the same distance southeast of the South Alice field.

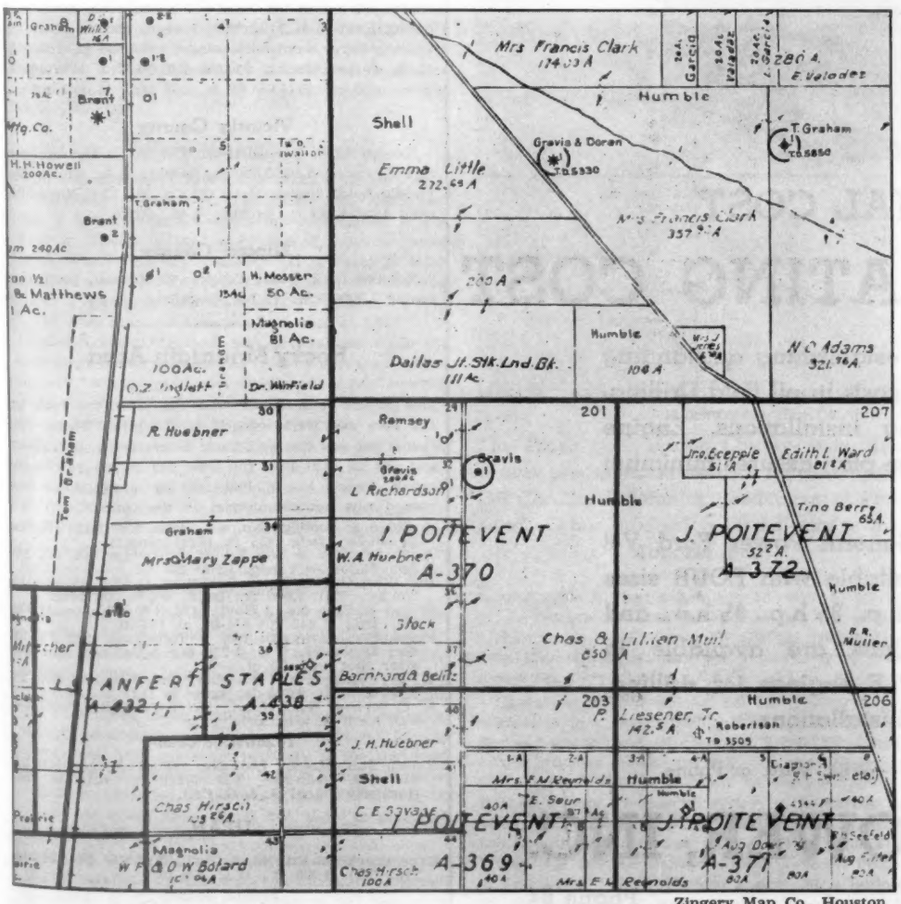
A Disappointment

Texas Gulf Producing Co. No. 1 A. N. Perez, 10 miles northwest of Alice which loomed as the discovery well of another field has been abandoned after the hole was swabbed dry through perforated casing at 6,429-34 ft., 6,463-68 ft., and 6,493-98 ft. Casing was cemented in this well the latter part of April, as the result of a drill-stem test at 6,438-6,510 ft., which tested 270 ft. of 38.5-gravity oil. Additional development is expected to be started in the area in the near future.

In the same county, 933 ft. due south of the discovery well of the newly opened Magnolia City field, Rich Irwin and others No. 1 Garcia Estate has been abandoned at 5,464 ft. The well failed to find any saturation in the discovery sand at 5,439-46 ft.

In the South Alfred field, two tests were nearing the pay, as Lonnie Glasscock No. 1 Robert Adams was coring in shale below 4,600 ft., and Lewis Production Co. No. 1 Adams was coring at 4,625 ft. Both wells are offsets to the discovery well.

Parr Drilling Co. No. 1 W. K. Hoffman, discovery well of the Camada field, western Jim Wells County, continues in the testing stage. During the week the well flowed 35 bbl. per day by heads through a 1-in. choke. Tubing pressure is 200 lb. and casing pressure 1,375 lb.



Zingery Map Co., Houston

Portion of East Alice field, Jim Wells County, showing scope of recent developments

A 3,000-ft. northeast extension to the Clara Driscoll field, Nueces County, was in the making as Texas Co. prepared to test No. 1 Flinn. The hole is bottomed at 5,451 ft., and 7-in. casing was cemented at 5,450 ft. Several showings of oil and gas have been logged below 5,100 ft. In the same field, R. B. Bryant No. 3 Galvan cored oil sand at 5,405-19 ft. and 5½-in. casing was cemented at 5,450 ft.

In the Richard King field, Nueces County, Southern Minerals Corp. was preparing to make a drill-stem test of a sand at 5,215-18 ft. The sand is reported to have shown favorable indications on an electrical survey. The well is 933 ft. south of No. 1-A King, and topped the recently discovered new pay at 5,398 ft., and cored to a total depth of 5,419 ft. where 7-in. casing was cemented.

Approximately 1 mile north of the Luby field, Seaboard Oil Co. was running casing for a production test in No. 1-A John LaPrelle. This well was drilled to a total depth of 7,440 ft. and casing will be cemented to test sand at 4,347-61 ft. where a recent drill-stem test showed 720 ft. of oil and 60 ft. of slightly brackish water. The well is looked upon as the discovery well of a pool in view of the fact that production is separated from the Luby structure by a dry hole.

White Point Partly Defined

The northwest limits of the White Point field, San Patricio County, were believed to have been defined as Houston Oil Co. prepared to complete No. 5-A Baldwin as a gas well. Drilled to a total depth of 5,757 ft., with only a slight showing logged in the 5,600-ft. sand, 5½-in. casing is being cemented at approximately 2,575 ft. to test two possible gas sands logged by an electrical survey at 2,300-2,500 ft.

In the same county, about 3,000 ft. north of the Ricaby field, Bishop & Moss No. 1 Sanford is reported to be showing oil and gas while cleaning out from sand at 1,294-1,305 ft. Casing was cemented on top of the sand at 1,294 ft. after a drill-stem test showed 150 ft. of oil.

Five miles southeast of the Barbacoas field, Starr County, Whitfield & Souther No. 1 Bennett & Carruth, Porcion 90, is coring below 2,728 ft. and is reported to have shown considerable oil and gas on a drill-stem test at 2,508-13 ft. The well will be carried to a contract depth of 3,000 ft. and casing is expected to be cemented for a production test. North of the Barbacoas field, Magnolia Petroleum Co. No. 1 M. M. Garcia, cored to a total depth of 6,429 ft., and is running an electrical survey. Numerous sands showing gas and distillate have been cored below 6,000 ft. and the well recently tried to blow out at 6,076-81 ft.

In McMullen County, 5 miles southwest of Calliham, casing has been reset in C. D. Scarborough No. 1 Paul Foyt, James Garner Survey, and the well is being retested. The hole is bottomed at 1,265 ft. with sand showing oil topped at 1,249 ft.

In the Maetze area, Goliad County, Cron & Gracey were scheduled to retest No. 2 Dreier after a production test through perforated casing at 5,566-70 feet showed salt water. The well was drilled to a total depth of 5,885 ft. and casing was cemented for testing after an electrical survey and sidewall cores showed favorable indications. Sands were logged at 5,283-94 ft., 5,373-83 ft., 5,551-70 ft. and 5,760-72 ft.

Balcones Fault Prospect

A new field for the Balcones Fault Line district seemed assured as Joe Hughes and others No. 1 O. B. Lentz is reported to have swabbed an unestimated amount of oil, and the well is being equipped for pumping upon completion. Dale lime with spots of saturation was cored at 2,348-68 ft. Austin chalk was topped at 2,368 ft. and saturation was logged in the chalk at

2,380-2,460 ft. Five-inch casing was cemented at 2,303 ft.

In the same county, in the William McLaughlin Survey, Marts & Beaven, Inc., No. 1 R. E. Chiles was scheduled to be tested as casing was being cemented to test the Edwards lime at 3,217-20 ft. This section was cored the previous week and is reported to have carried a good oil showing.

In Lee County, Fred Pederson and others No. 1 Brown, David Hudson Survey, is coring deeper from an old total depth of 6,418 ft., and the Edwards lime cored at 6,429-33 ft., is reported to have shown an increase in porosity. This is one of the deepest tests drilled in the district.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Aransas-San Patricio Counties

McCampbell field; Caddell & O'Bannion No. 1 W. T. Williams, 7,136 ft., 25 bbl. distillate, 7/32-in. choke. Corgey & Grote No. 8 McCampbell, 7,140 ft., 82 bbl., ⅛-in. choke. Corgey & Grote No. 2 Scrivner, 7,150 ft., 80 bbl., ⅛-in. choke. Corgey & Grote No. 2 Whitlow, 7,150 ft., 85 bbl., ⅛-in. choke.

Bastrop County

Yoast field: Pulliam & McCarty No. 3 Yoast, 1,676½ ft., 5 bbl. oil, 15 bbl. water, pumping.

Duval County

Longhorn field: M. M. Miller No. 6 fee, sand 4,893-4,903 ft., 117 bbl., ¼-in. choke. M. M. Miller No. 7 fee, sand 4,024-28 ft., 128 bbl., 5/32-in. choke. Piedra DeLumbre field: Magnolia Petroleum Co. No. 24 Duval County Ranch Co., sand 2,154-68 ft., 300 bbl., ⅛-in. choke. Magnolia Petroleum Co. No. 25 Duval County Ranch Co., sand 2,001-13 ft., 367 bbl., ⅝-in. choke.

Goliad County

North Pettus field: L. D. Ormsby No. 1 Gillette, 3,908 ft., abandoned.

Jim Wells County

South Alice field: Tom Graham No. 5-E Bankers Mortgage, perforated casing 5,335-41 ft., 75 bbl. 3/32-in. choke.

Guadalupe County

Darst Creek field: Elimag Oil Corp. No. 3 Applings, sand 2,578-81 ft., 25 bbl. oil, 22 bbl. water, pumping.

McMullen County

Ezzell field: E. M. Jones No. 73 Ezzell, perforated casing 1,535-40 ft., 19 bbls., pumping. E. M. Jones No. 83 Ezzell, perforated casing 1,526-31 ft., 37 bbl., pumping. E. M. Ezzell, perforated casing 1,516-22 ft., 44 bbl., pumping. Calliham field: Marion Production Co. No. 9 Lark, 1,059 ft., abandoned. Marion Production Co. No. 10 Lark, 1,339½ ft., abandoned.

Medina County

Chacon Lake field: J. I. Cromwell and others No. 1 Mangold, 1,298 ft., abandoned.

Nueces County

Clara Driscoll field: R. B. Bryant No. 1 Rogers, perforated casing 5,565-75 ft., 100 bbl., 7/64-in. choke. T. S. Reed No. 5 Barlow, perforated casing 5,469-71 ft., 40 bbl., jetting. Luby field: Seaboard Oil Co. No. 45 Luby, perforated casing 4,354-59 ft., 102 bbl., ⅛-in. choke. Sun Oil Co. No. 1 J. B. Butts, perforated casing 5,050-56 ft., 108 bbl., ⅛-in. choke.

Refugio County

Bonnieview field: Royal Oil & Gas Corp. No. 1 Jurica, 6,510 ft., abandoned. La Rosa field: Coronado Corp. No. 14 Rooke, perforated casing 5,900-03 ft., 157 bbl., ⅛-in. choke. Coronado Corp. No. 7 Yarrow, perforated casing 6,330-33 ft., 165 bbl., ⅛-in. choke. Mellon Creek field: Quintana Petroleum Co. No. 4-B O'Connor, sand 5,739-5,882 ft., 113 bbl., ⅞-in. choke. Tomoconnor field: Quintana Petroleum Corp. No. 16-C O'Connor, perforated casing 5,838-42 ft., 1,116 bbls., ⅝-in. choke.

San Patricio County

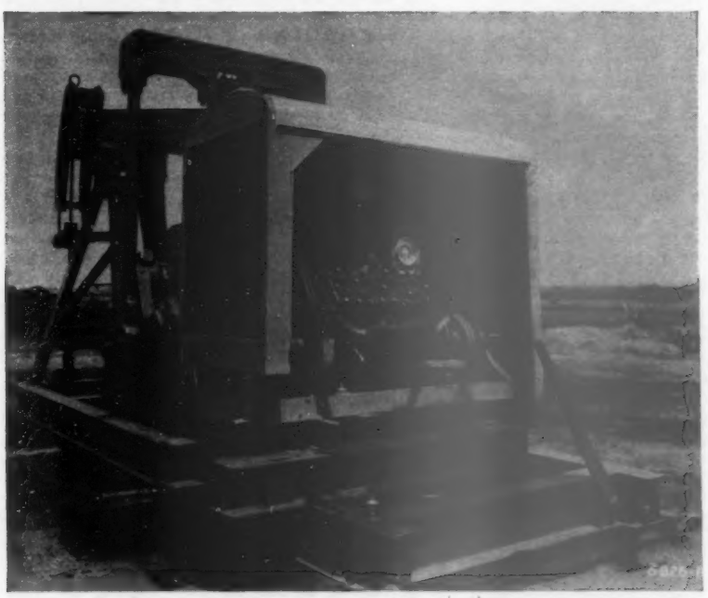
East White Point field: Plymouth Oil Co. No. 2-B Cole, perforated casing 5,666-73 ft., 129 bbl., 7/64-in. choke. Plymouth Oil Co. No. 3 Solar-Ficke, perforated casing 5,627-36 ft., 122 bbl., 7/64-in. choke. Shell Petroleum Corp. No. 3 Kirk, sand 5,589-5,636 ft., 135 bbl., ⅛-in. choke. Sinclair Prairie Oil Co. No. 4 Womack, perforated casing 5,651-66 ft., 145 bbl., ⅛-in. choke.

Victoria County

Keeran field: Barnsdall Oil Co. No. 3 Keeran, perforated casing 5,582-5,600 ft., 64 bbl., 7/32-in. choke. McFaddin field: Transwestern Oil Co. No. 12-E McFaddin, sand 4,393-4,419 ft., 64 bbl., ⅛-in. choke.

Zapata County

Escobas field: Texas Co. No. 60 Measles, perforated casing 1,309-17 ft., 45 bbl., pumping.



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GENERAL POWER, INC.

QUAPAW, OKLAHOMA Phone 64

Rocky Mountain Area

(Continued from Page 90)

also is the total depth, and gas blew the tools up the hole and were wedged in the pipe. These were fished out and the well made three flows. It is cleaning out to drill into the lime. It is not yet in the break where No. 8 had its big production. Last named was not commercial in the contact.

Coolidge & Coolidge No. 4-A State, NW NW SW Sec. 36-36n-2w. Drlg. 825 ft. (first report).

A. E. Crumley & Son No. 16 Fryberger, SE NE SW Sec. 24-35n-3w. Drlg. 1,530 ft.

Big West Oil Co. No. 9 Dahlquist, C NW NE Sec. 28-35n-3w. T.D. 1,605 ft.; cmtd. 6⅝-in. on bttm.

Provel & Shea No. 2 Govt., SW NW SW Sec. 11-35n-3w. Drlg. 1,245 ft.; 8¼-in. at 105 ft.

Fulton-Commonwealth No. 2 Thompson, SE NE SE Sec. 28-35n-3w. T.D. 1,728 ft.; swdg. csg. and C.O. after shot with 30 qt.

W. M. Cassidy No. 1 Phoenix, CNL NW NW Sec. 28-35n-4w. T.D. 2,325 ft.; prep to D.D.

K. C. Morton No. 1 Govt., SW SW SE Sec. 1-35n-3w. S.D. 1,813 ft. after drlg. plug.

Yellowstone County

Nelson Story-Hogan, Ltd., No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. T.D. 5,129 ft.; R.U. to rel.; (formerly Signal O. & G. Co.).

UTAH

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. T.D. 3,090 ft.; W.O. 6⅝-in.

Summit County

Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. Res. at 2,876 ft.; drlg. 2,965 ft.

Kansas Developments

By DAL DALRYMPLE

Norton County Well Opens a Pool 23 Miles from Nebraska

The oil productive area in Kansas was extended to within 23 miles of the Nebraska line with the opening of the first pool in Norton County. Almost simultaneously, discovery of the first oil to be found in Phillips County, just east of Norton and also touching the Nebraska border, was reported.

Power Oil Co. and Olson Oil Co. opened the Norton County pool at No. 1 Van Patten, C NE Section 26-4-21w, which was estimated good for 200 bbls. of oil daily from Lansing-Kansas City lime. Location is 1¼ miles east of the Phillips County line, about 23 miles northwest of nearest production in the Faubion pool in Rooks County and an equal distance from Nebraska.

Lansing lime was topped at 3,325 ft. In a core at 3,475-82 ft. in the basal Lansing-Kansas City section, 3 ft. of saturation was found, according to M. A. Halsey of the Power Oil Co., Tulsa. A Schlumberger survey verified the showing. Operators drilled and cored ahead, finding fair porosity at 3,487-96 ft. Arbuckle lime was topped at 3,610 ft., and the hole bottomed at 3,665 ft. Five-inch casing cemented at 3,616 ft. in the Lansing series was gun-perforated with 84 shots at 3,475-82 ft. and 3,487-96 ft., and free oil rose in the hole. It was acidized with 1,000 gal. and reacidized with 6,000 gal., the hole standing full of fluid. After swabbing lowered the fluid volume 600 ft., the wildcat cleaned itself and flowed over the derrick for 3 minutes. Operators then swabbed throughout the day and lowered the fluid to 70 ft. off bottom. After standing overnight, it was swabbed at intervals the following day, a total of 173 bbl. of oil being recovered in 15 hours. In the last 4 hours of the swabbing test, operators were unable to lower the fluid level below 70 ft. The well is shut in, awaiting potential test and a market. Gravity of the oil is about 27°.

Phillips County Strike

Oil was discovered in Phillips County the past week at Blue Stem Oil Co. No. 1 Donaldson, SE NE NE Section 25-5-18w, wildcat about 3 miles northwest of the Faubion pool in Rooks County and 20 miles southeast of the Norton County discovery. It is about 29 miles south of the Nebraska line. If it is completed as a producer, it will open the first pool in the county.

The Blue Stem wildcat was bottomed at 3,111 ft. in Lansing-Kansas City lime, and oil rose 700 ft. in the hole shortly after the bit had reached that depth. Testing and completion of the well was delayed, however, when the rig was destroyed by fire started by a spark from a welding outfit. Rig is being rebuilt.

At the other end of the Kansas productive area in the old southeastern stripper country, the first Arbuckle lime pool in Wilson County was opened. John W. Gard and others No. 1 Wilson, SW cor. Section 32-27-14, about 11 miles northwest of Fredonia, Wilson County seat, topped Arbuckle lime at 1,594 ft. and was bottomed at 1,604 ft. It pumped 75 bbl. of oil in the first 10 hours, according to field reports.

Continental Oil Co., B. B. Blair and Bradley Brothers extended the Bornholdt pool, in McPherson County, ⅝ mile southwestward at No. 1 Mattson, SW NW NW Section 31-20-5w. It topped chat at 3,290 ft., was bottomed at 3,317 ft., oil rose 2,950 ft. in the hole in 1 hour and 45 minutes, and it then started flowing over top of casing. Seven-inch casing was set at 3,291 ft. The discovery well and only other producer in the Bornholdt pool was completed in August 1937 at Bradley Brothers and C. R. Craft No. 1 Bornholdt, SW SE Section 30-20-5w, for initial yield of 145 bbl. daily at plug-back depth of 3,333 ft. in chat.

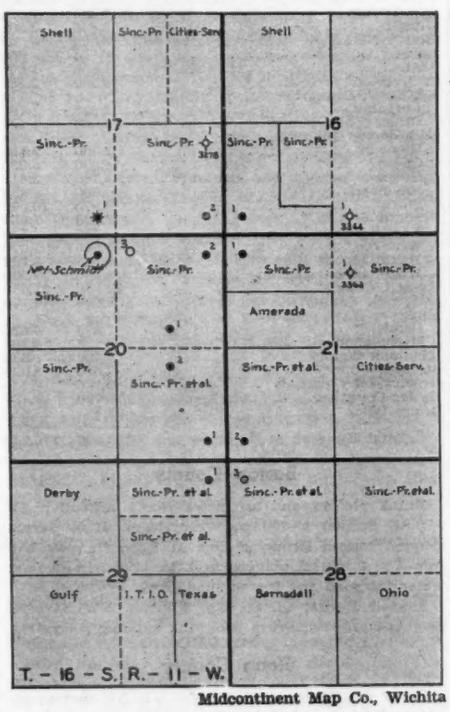
Gulf Oil Corp. No. 1 Linke, CEL NE SE Section 36-19-10w, extended the Chase pool in Rice County ¾ mile westward. It made initial potential of 327 bbl. of oil at 3,283 ft. total depth in Arbuckle lime.

Wildcat Activity

Gulf Oil Corp. No. 1 Janssen, SW SW SW Section 29-17-10w, wildcat in southwestern Ellsworth County, was acidized with 2,000 gal., pumped 239 bbl. of 42.3-gravity oil in 8 hours and made daily potential of 716 bbl. Production was from Arbuckle lime at 3,254-72 ft., total depth. Location is ⅝ mile northeast of the Bloomer field and ¾ mile north of the Stumps pool.

Vernon Oil & Gas Co. and others No. 1 Dupont, SE SE NE Section 22-19-16w, Rice County wildcat, had Arbuckle lime at 3,295 ft., was bottomed at 3,325 ft., water intruded and it was abandoned.

H. H. Billerman No. 1 Huston, CSL SW SW Section 36-24-13, wildcat in Woodson County, topped Arbuckle



Midcontinent Map Co., Wichita

The Prusa pool, Barton County, was given a new producing horizon at Sinclair Prairie Oil Co. No. 1 Schmidt, productive in Basal sand. Other production in the pool is from Abuckle lime

lime at 1,900 ft., had a hole full of water at 1,933-37 ft., total depth, and was abandoned.

Fred Smith No. 1 Werth, SW SW SE Section 33-15-18w, Ellis County wildcat, was reported as an abandoned rig.

Gatlin No. 1 Fielbach, SE SE SW Section 3-12-23, wildcat in Johnson County and southeast of Bonner Springs, was dry and abandoned at 712 ft., total depth.

New wildcats include the following: United Production Co. No. 1 Illinois, NW NW SE Section 31-29-34w, Haskell County, rigging up rotary; C. L. Sheedy and others No. 1 Long, SE SE SW Section 28-26-14, Woodson County, drilling below 1,280 ft.; Dave Judd No. 1 Waits, N½ SW SE Section 4-15-25, Johnson County, drilling below 140 ft.; Western Kansas Oil & Refining Co. and others No. 1 Mooreshead, SW cor. Section 24-23-1w, Harvey County, location; Jock Garden and others No. 1 Lagree, SE cor. Section 4-23-3w, an old Harvey County wildcat being deepened from 280 ft., drilling below 2,530 ft.; Nelson Drilling Co. No. 1 Hodge, NW NW NE Section 25-20-6w, Rice County, building rotary rig; Carey Oil Co. and others No. 1 Link, SW NW SE Section 19-19-9w, Rice County, location; Central Petroleum Co. No. 1 Dippel, C N½ NE SE Section 27-19-10w, Rice County, waiting on cement at 218 ft.

Ellis County

Dickey Oil Co. completed an extension well ½ mile north of production in the South Burnett pool, Ellis County, at No. 1 Gumble, SW SW SE Section 6-11-17w. It had Arbuckle lime at 3,442-45 ft., total depth, and pumped 250 bbl. of 30-gravity oil in 7 hours. It made echometer potential of 4,257 bbl.

Gulf Oil Corp. No. 2 Mai, NW SW SE Section 14-11-17w, Bemis field, found Arbuckle lime at 3,361-67 ft., total depth, and swabbed 156 bbl. of oil naturally in 4 hours. It was acidized with 2,000 gal., pumped 58 bbl. of oil in 2 hours, and made depthograph potential of 10,000 bbl., with maximum production of 3,500 bbl.

Cities Service Oil Co. No. 2 McCord, SE NW NE Section 26-11-17w, was treated with 2,000 gal. of acid, pumped 91 bbl. of oil in 8 hours and made potential of 274 bbl. of oil daily, with 4 per cent water. It found Arbuckle lime at 3,533-63 ft., total depth.

Phillips Petroleum Co. No. 1 Peavey, SW SW SE Section 13-11-18w, Peavey pool, Arbuckle lime at 3,393 ft., was bottomed at 3,411 ft., and was acidized with 2,000 gal. It pumped 164 bbl. of oil in 10 hours and made echometer and bomb potential of 1,364 bbl.

Cities Service Oil Co. No. 9 Rumsey, NW NW SE Section 23-11-17w, was building rotary rig. Shell Oil Co. No. 18 Rumsey, SW NW NE Section 23-11-17w, was a location. Deep Rock Oil Corp. No. 29 Baumer, SE NE SE Section 27-11-17w, was drilling below 1,025 ft.

Russell County

Sinclair Prairie Oil Co. No. 4 Rogg, CNL SW SE Section 29-14-13w, West Letsch pool, Russell County, topped Lansing-Kansas City lime at 2,876 ft., had pay at 2,905-24 ft., total depth, and was acidized with 7,000 gal. It pumped 295 bbl. of oil in 8 hours and made daily potential of 885 bbl.

Hartman & Blair No. 2 Gurney, NW NE NW Section 23-14-14w, Gurney pool, was acidized with 16,000 gal. in several stages, pumped 173 bbl. of oil in 8 hours and made 24-hour potential of 518 bbl. It topped Lansing lime at 2,958 ft., had pay at 3,033-38 ft., granite wash 3,220 ft., total depth 3,302 ft., and plugged back to 3,126 ft.

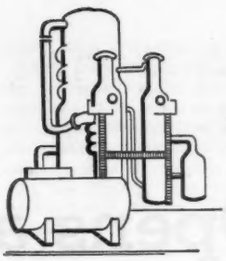
Coralena Oil Co. No. 4 Sellens Estate, NW NW SE Section 29-15-13w, Trapp field, found Arbuckle lime at 3,318-21 ft., total depth, and pumped 15 bbl. of 39-gravity oil daily.

Same company's No. 10 Deines, SE SW NE Section 36-15-14w, topped Arbuckle lime at 3,293 ft., was bottomed in lime at 3,308 ft., and was treated with 2,000 gal. of acid. It pumped 129 bbl. of oil in 8 hours, making 24-hour potential of 386 bbl. Gravity of the oil was 39°.

First reports of new work in Russell County: Coralena Oil Co. No. 5 Sellens Estate, SE SW SE Section 29-15-13w, location; Gulf Oil Corp. No. 9 Mollie, SE SW SE Section 25-15-14w, building rotary rig; Coralena Oil Co. No. 13 Deines, NE SW NE Section 36-15-14w, moving in material; National Refining Co. No. 1 Hall, SE cor. Section 21-14-14w, location.

Rice County

Continental Oil Co. and others No. 6 Rice, NW SE NW Section 13-18-8w, Geneseo field, Rice County, found Arbuckle lime at 3,217-30 ft., total depth, was acidised



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with 2,000 gal., pumped 671 bbl. of oil in 8 hours and made daily potential of 2,014 bbl. Gravity of the oil was 40°.

Shell Oil Co. No. 15 Zajic, NE SE NE Section 13-18-8w, swabbed 567 bbl. of oil in 8 hours and made 24-hour potential of 1,276 bbl. Production was from Arbuckle lime at 3,211-28 ft., total depth.

In the Campbell pool, Hinkle Oil Co. and others No. 1 Truesdale, NW cor. Section 34-19-9w, topped Arbuckle lime at 3,188 ft., had pay at 3,198-3,205 ft., and was bottomed at 3,217 ft. After acidizing with 2,000 gal., it pumped 192 bbls. of oil in 8 hours, making daily potential of 575 bbl. It extended the pool ½ mile eastward.

C. H. Weaver No. 1 Peterson, NW NW NE Section 4-20-9w, ¼ mile south of Campbell production, topped Arbuckle lime at 3,233 ft.; had pay at 3,244-58 ft., total depth 3,260 ft., and plugged back to 3,258 ft. After acidizing with 750 gal., it pumped 2 bbl. of oil an hour.

New operations in Rice County: Skelly Oil Co. No. 2 Sledd, SW cor. Section 27-19-9w, building rotary rig; Gulf Oil Corp. No. 1 Tonnie, C W½ SW NE Section 31-19-9w, waiting on cement at 240 ft.; Skelly Oil Co. No. 2 Purcell, SE SE NW Section 33-19-9w, location.

Estimated Daily Production

Estimated daily production for Kansas for the week ending May 20, and for the preceding week, was as follows:

	Barrels	
	May 20	May 13
Oxford City	1,150	1,120
Burrton	10,275	10,100
Ritz-Canton	7,225	7,110
Graber	3,875	3,900
Hollow-Nikkel	3,500	3,360
Lerado	850	605
Voshell	1,850	1,605
Wellington	2,500	2,430
Ellsworth County:		
Lorraine	2,025	1,780
Other pools	1,560	1,405
Rice-Barton counties:		
Bloomer	2,900	2,485
Chase	4,250	5,030
Geneseo	3,700	3,610
Raymond	600	835
Silica	9,975	10,600
South Silica	2,325	1,980
Keesling	750	740
Wherry	3,550	4,670
Miscellaneous Rice	6,675	6,720
Miscellaneous Barton	8,445	7,530
Russell County	22,850	21,650
Sedgwick County	4,250	4,170
Ellis:		
Bemis	7,675	6,620
Miscellaneous	3,135	4,790
Kingman County	700	635
Stafford County	7,615	8,020
Greenwood County	9,750	9,700
Butler County	19,000	19,425
Other fields	22,595	23,615
Total Kansas	175,550	176,240

Barton County

Frank Hollow and associates No. 1 Scheufler, SE SE SE Section 19-20-11w, West Hagen area, Barton County, topped Arbuckle lime at 3,336 ft., was bottomed at 3,400 ft., plugged back to 3,240 ft. and shot. water intruded and it was abandoned.

Sinclair Prairie Oil Co. No. 3 Prusa, NW NW NE Section 20-16-11w, Prusa pool, was building rotary rig.

Reno County

Derby Oil Co. No. 4 Wood, NW NW NE Section 36-22-5w, Buhler pool, Reno County, had Simpson sand at 3,909-16 ft., total depth, pumped 201 bbl. of oil in 8 hours and made daily potential of 604 bbl. of oil, with 16 bbl. of water.

Olson Drilling Co. and Shell Oil Co. No. 7 Blake, NE NE SW Section 23-23-4w, Burrton field, was deepened from old total depth of 3,601 ft. to granite wash at 4,530-4,709 ft., total depth, and was recompleted for a water disposal well.

Westgate-Greenland Oil Co. and others No. 1 Swanson, C N½ N½ NW Section 1-23-5w, was a location.

Harvey County

Skiles, Bennett & Hammond No. 3 Short, C NE NE Section 30-23-3w, Burrton field, Harvey County, had Mississippi lime at 3,258-61 ft., total depth, pumped and flowed 270 bbl. of oil in 8 hours and made daily potential of 811 bbl. It was acidized with 2,500 gal.

Aylward Production Co. No. 1 Wiley, S½ S½ NE Section 18-23-3w, had set casing and was waiting on cement at 270 ft.

Pratt County

Sinclair Prairie Oil Co. No. 1 Greider, NE SE SE Section 26-27-11w, Cunningham pool, Pratt County, was

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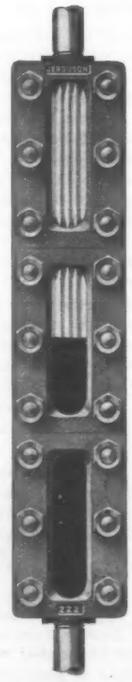

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Miscellaneous First Reports

In Stafford County, Stanolind Oil & Gas Co. No. 5 McSpangenberg, C E½ SW NW Section 29-22-11w, location; Continental Oil Co. and others No. 1 Boland, NE NE SW Section 13-25-13w, rigging rotary.

Ellsworth County: Mid-Continent Petroleum Corp. No. 1 Ehley, SE cor. Section 30-17-10w, cellar.

McPherson County: H. & M. Drilling Co. No. 2 Lagree, C W½ NE NW Section 31-19-1w, moving in machine; Grissman and others No. 7 Drum, C N½ N½ NE Section 35-19-2w, drilling.

Barber County: Barbara Oil & Gas Co. No. 3-A Holmes, NE NW SE Section 15-33-13w, cellar.

Butler County: Lauck Petroleum Co. No. 1 Zahorsky, C N½ N½ SW Section 26-20-11w, moving in material; Rex & Morris No. 1 Farmer, NE cor. Section 22-28-7, rigging up machine; E. B. Shawver No. 17 Stone, SW SE NW Section 2-25-5, moving in material.

Cowley County: Hartman & Blair No. 1 Waite, SW SE NW Section 21-31-4, rigging up rotary.

Greenwood County: Oko Oil Co. No. 17 Shadel, SW SW SE Section 15-23-13, spudded; Aikman and others No. 1-B Myers, NE SE SW Section 10-24-12, drilling below 1,500 ft.; Ward McGinnis No. 3 Dehlinger, C E½ SE SE Section 3-24-13, drilling below 1,200 ft.; Christy No. 4 Pusey, SE SW SE Section 31-24-13, rigging up.

Woodson County: Nye & Kilby No. 6 Shaffer, SE SE SW Section 31-23-14, drilling below 635 ft.; Aikman & Son No. 1 Wiede, NW NW SW Section 1-24-14, drilling below 1,500 ft.

Forest City Basin Activity

PLATTSBURG, Mo., May 22.—After being delayed by caving hole, fast time was being made at C. E. King and others No. 1 Willis, NW NW NW Section 13-55-32w, Clinton County wildcat being drilled near this town. Spudded on April 27, it had been drilled to 705 ft. by May 15, and now is below 1,005 ft. and is going ahead toward the contract depth of 2,000 ft. Operators are using a K-type spudder. Showings of gas have been reported in upper formations. This is an old shallow gas area.

Frank Hopper and others No. 1 Black, NW NW NW Section 36-52-32w, near Liberty in Clay County, was running 6⅝-in. casing at 1,225 ft. Both oil and gas showings were found in upper zones. It found Mississippi lime at 915-1,225 ft.

(Continued on Page 102)

Illinois Fields

(Continued from Page 75)

lime top at 2,578 ft., drilling at 2,610 ft. Marhill Oil Co. No. 1 Doyle, SE NE SW Section 29-10n-4w, rigged up machine and shut down.

In Cumberland County, Culpepper No. 1 Gardner, NE SE NE Section 2-10n-10e, drilling at 40 ft. with machine.

In Fayette County, E. Fred Jones No. 1 Zanders, SE cor. NW Section 36-9n-3e, set 7-in. casing at 1,552 ft., total depth 1,588 ft. C. E. Lange and others No. 1 Bloom, SE SE NE Section 19-6n-1e, drilling ahead from 1,310 ft. Giffert Drilling Co. No. 1 Garver, SE NW NE Section 25-6n-2e, set 10-in. casing at 35 ft., and drilling ahead.

In Shelby County, Kingwood Oil Co. and Continental Oil Co. No. 1 Trueblood, SE SW SW Section 3-9n-5e, Benoist sand top at 1,909 ft., drilling ahead from 1,924 ft.

In Crawford County, Anderson No. 1 Hostettler, NW cor. SW NW SW Section 31-8n-11w of second principal meridian, shut down at 1,400 ft., flowing salt water.

In Bond County, Reisig and Quisenberry No. 1 Wilderman, NE NE NE Section 3-6n-3w, total depth 2,430 ft. Kesl and others No. 1 Sathoff, NE NE NW Section 12-6n-5w, Trenton lime top at 2,605 ft., drilling at 2,675 ft.

In Effingham County, Kingwood Oil Co. No. 1 McWhorter, C E½ SE NW Section 15-6n-6e, St. Peter sand top at 5,978 ft., Shakopee at 6,195 ft., drilling at 6,429 ft. in white dolomitic limestone. This is the deepest drilling well in the state.

In Clay County, Phillips Petroleum Co. No. 1 N. Murvin, SW SW NE Section 22-5n-7e, drill stem test at 2,508-29 ft. recovered 420 ft. of fluid, mud and water, with a salty taste; shut down for orders.

In Marion County, Menhall and others No. 1 Hazelwood, NE NE SW Section 8-2n-1e, McClosky lime top at 1,769 ft., drilling at 1,772 ft. W. B. Dallas and others No. 1 Tonline, SE cor. Section 25-2n-1e, McClosky lime top at 2,098 ft., total depth 2,123 ft., shut down for orders.

In Lawrence County, Walter Payne No. 1 Patrick Brothers, NW cor. SW NE Section 28-4n-11w of second principal meridian, drilling at 2,306 ft.

In Bond County, Eason Oil Co. No. 1-A Bank, 430 ft. from E and 330 ft. from N lines of NW¼ Section 24-4n-3w, drilling at 433 ft.; (first report).

In St. Clair County, Pennington & Dunn No. 1 Schoene, SE SE NE Section 2-1n-6w, drilling at 215 ft. Algona Oil Co. No. 1 Meuler, SW SE NE Section 7-1n-6w, total depth 1,355 ft., waiting for casing.

In Clinton County, Harris and others No. 1 Hage, C S½ SE SE Section 18-1s-5w, drilling at 1,142 ft.

In Jefferson County, T. Vawter No. 1 Kell, NW SW NE Section 9-1s-1e, drilling at 2,020 ft. V. O. Lewis No. 1 Bates, NE cor. NW NE Section 18-1s-1e, total depth 1,805 ft., will continue with rotary tools. McQueen and others No. 1 Sorenson, NE NE NW Section 5-2s-2e, total depth 2,016 ft., shut down for orders. Papoose Oil Co. No. 1 Schweinfurth, NE SW SE Section 11-2s-2e, drilling at 1,967 ft. M. B. Armer and others No. 1 Gilbert, NW NE SW Section 25-2s-2e, drilling at 1,980 ft.

In Wayne County, D. Davis No. 1 Carlson, C N½ SW SW Section 34-1s-7e, set 5½-in. casing at 3,248 ft. Testing lime pay at 3,254-61 ft.

In Edwards County, Morrison & Noah No. 1 Stafford. NW NW SW Section 13-2s-10e, set 10-in. pipe at 130 ft., and drilling plug.

In Wabash County, Al Wilhelm No. 1 Baird, C N½ NW NE Section 1-2s-13w of second principal meridian, drilling at 675 ft. W. M. Bartlett No. 1 Stansfield, SW SE SE Section 19-2s-13w, total depth 1,719 ft., pumped 182 bbl. in 15 hours and then shut down for lack of storage. Continental Oil Co. No. 1 Schultz, SE SE NW Section 30-2s-13w, drilling at 200 ft. Zeigler & White No. 1 Schultz, SE cor. NW SW Section 31-2s-13w, derrick up. R. S. Hays No. 1 Schultz, SE NW SW Section 7-3s-13w, Aux Vases sand at 2,705 ft., drilling at 2,720 ft.

In Wayne County, Summers and others No. 1 Felix, SE SW SE Section 22-2s-8e, drilling at 2,300 ft. New Penn Development Co. No. 1 Scott, NW NW SE Section 7-2s-9e, plugged back to 3,406 ft. and reacidized with 3,000 gal., swabbing salt water and a showing of oil. R. D. Porter No. 1 Kleinicke, NE SE SW Section 15-2s-9e, drilling at 1,356 ft. New Penn Development Co. No. 1 Baker, SE NW NW Section 21-2s-9e, Fredonia lime at 3,338 ft., set 7-in. casing and will continue with standard tools.

In Jefferson County, Armstrong and others No. 1 Scott, SE NW SE Section 23-3s-2e, plugged back total depth 2,831 ft., set 7-in. casing at 2,721 ft., pumped 30 bbl. of oil and 70 bbl. of water in 24 hours; still testing. Same owners' No. 1-B Scott, SE NE NW Section 23-3s-2e, McClosky lime at 2,815 ft., total depth 2,844 ft., shut down for orders.

In White County, Chisom No. 1 Boultinhouse, C W½ SW SW Section 10-4s-14w of second principal meridian, total depth 400 ft., set 10-in. csg. at 110 ft., drilling plug. Superior Oil Co. No. 1 Fulton, SW SW NE Section 26-4s-14w, drilling at 1,873 ft. Mazda Oil Corp. No. 1 Carmi Orphans Home, SE SE NE Section 22-5s-9e, drilling at 3,050 ft. Bethel sand was topped at 3,020 ft. Sun Oil Co. No. 1 Ford, NW NE NE Section 18-5s-14w, Benoist top at 2,845 ft., drilling at 2,880 ft. Eason Oil Co. No. 1 Stams Heirs, SW SE SW Section 14-6s-9e, drilling at 1,620 ft.

In Perry County, G. H. Blankenship No. 1 Rheinecker, NW NW NE Section 3-6s-4w, fishing at 1,175 ft.

In Saline County, Coast Production Co. No. 1 Choisser, NE NW NW Section 5-8s-7e, total depth 1,904 ft.; will underream 6-in. casing.

In Gallatin County, Coates and others No. 1 Green, SW cor. Section 16-9s-9e, total depth 2,711 ft.; plugged back to 2,565 ft., perforated with 40 shots opposite Roseclaire at 2,540-57 ft., flowed salt water; plugged back to 2,200 ft. and drilled to 2,490 ft., perforated with 40 shots at 2,360-2,405 ft.; swabbed mud and water; given 40 shots at 1,765-1,800 ft.; swabbing brought up mud and water. Perforated with 240 shots at 1,761-95 ft., no results in oil. Will shoot again. F. R. Jackson No. 1 Turner, C NW Section 27-9s-9e, drilling at 1,500 ft. F. R. Jackson and others No. 1 McGhee, SW NE NE Section 29-9s-9e, rig up.

In Williamson County, Ray Shipman No. 1 Chamness, SW cor. NW SW SW Section 21-9s-2e, shut down for orders at 1,363 ft.

In Johnson County, Tunnell Hill Oil Co. No. 1 J. Boner, W½ SW NE Section 30-11s-3e, total depth 775 ft., shut down.

In Knox County, Hammer No. 1 Bragg, NE SE SE

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For instance, it eliminates the necessity of other seating means, such as working barrels, seating nipples, or mechanical shoes. It seats your insert pump by packing off and holding down directly in the tubing itself.

It saves the expense of pulling tubing. It saves on sucker rods and other equipment where fluid level is high and where the well can be pumped above bottom. It is screwed directly onto the pump and replaces the conventional cup or mechanical hold-down. The pump is run in the usual way, with no special care required.

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BRADFORD MOTOR WORKS INC

OIL WELL SUPPLIES

BRADFORD, PA. — TULSA, OKLA.

Section 9-11n-2e of fourth principal meridian, drilling at 684 ft.

In Saline County, Kingwood Oil Co. No. 1 McIntyre, NW cor. Section 25-9s-7e, drilling at 2,370 ft.

In McDonough County, DeKalb Corp. No. 1 Hartsook, NW NW SE Section 14-4n-4w of fourth principal meridian, drilling at 270 ft.

CENTRAL OHIO

MARIETTA, Ohio, May 20.—The Oriskany test in Section 22, Lebanon Township, Meigs County, Ray Proffitt and others No. 1 E. O. Taggart, is being cleaned out after having trouble with shooting. The first shot of 30 qt. failed to fire, due to cavings, but the second shot of 25 qt. was successfully fired, which the operators believe set off the lower shot. No gas was showing due to cavings in the hole. The Corniferous lime was topped at 4,292 ft., Oriskany sand at 4,402 ft., drilled 21 ft. into the sand. The well had made 100,000 cu. ft. of gas at 4,416-17 ft.

In Athens County, Canaan Township, C. W. Muzum No. 1 H. J. Hoskinson, Section 1, reported last week as an oil well in the first Berea sand, was drilled to the second Berea for a small gas well; sand at 1,574-87 ft. In Lodi Township, Ohio Fuel Gas Co. No. 2 Anna P. Williams, Lot 19, is good for an open flow of 200,000 cu. ft. of gas in the second Berea at 1,490-1,506 ft.

In Cuyahoga County, Mayfield Township, Lot 4, Section 1, Wyles and others No. 1 William Leutz found the Newburg and Clinton sands dry, Newburg 2,775-2,837 ft., Clinton 3,298-3,358 ft. This test marks the first dry hole in the area.

In Guernsey County, Washington Township, George Jewell and others found the Berea sand dry in two tests: No. 1 E. C. Davidson, Section 2, Berea 1,362-1,429 ft.; No. 1 John B. Grimsley, Section 18, Berea, 1,202-82 ft.; Both wells were abandoned.

In Knox County two Clinton sand gas wells were completed in Section 7, Union Township: H. E. Perkins No. 1 Delphia Steele had an open flow of 830,000 cu. ft., sand found at 2,825-45 ft.; Ohio Fuel Gas Co. No. 1 Olva V. Harrold gaged 130,000 cu. ft., open flow, sand 2,745-61 ft.

In Licking County, Mary Ann Township, 4 miles northeast of Newark, Guy Shrider No. 1 Lawrence Hughes, Section 25, was drilled 25 ft. in the Clinton sand for 1,360,000 cu. ft. of gas; top of the Clinton at 2,570 ft.; drilling was stopped on account of a crooked hole.

William Dempsey found the Clinton sand missing in the No. 1 M. J. Rink in Section 11, Avon Township, Lorain County, and abandoned the well at 2,343 ft.

Atha Realty Co. No. 1 Fred Wilkins, in Section 7, Madison Township, Perry County, was drilled 15 ft. in the Clinton sand for an open flow of 400,000 cu. ft. of gas; top of the sand was 2,912 ft.; total depth 2,927 ft.

In Medina County, Spencer Township, Alex McCrea No. 1 C. L. Billman, Section 6, is a gas well in the Clinton sand gaging 480,000 cu. ft., sand at 2,634-42 ft.

In Noble County, Olive Township, William Patten No. 1 Eve Lorey, Section 13, made 140,000 cu. ft. of gas, open flow, from Berea at 1,642-61 ft.

In Stark County, Jackson Township, East Ohio Gas Co. No. 1 Clarence Hoover, Section 14, made 220,000 cu. ft., open flow, of gas from Clinton sand at 4,610-41 ft.

In Washington County, Marlow Township, McTaggart Gas Co. No. 2 Thomas Barrett, Section 25, is a small gas well in the Berea sand, total depth 1,812 ft. In Grandview Township, McCall Drilling Co. No. 6 Curtis A. Price, Section 21, found 120,000 cu. ft. of gas in the Injun sand at 1,649-57 ft.

Lima Field

In Wyandot County, Richland Township, R. C. Jones No. 1 German Tehnel, Section 9, was abandoned at 1,417 ft. No oil or gas showings were found. Top of Trenton was at 1,317 ft.

Charles Shaw No. 2 Mauce Zoller, Section 26, Clinton Township, Seneca County, had top of Trenton at 1,740 ft., with a show of oil 13 ft. in. It is still drilling.

Two of the sub-Trenton tests have shut down for the present. In Henry County, Harrison Township, McAfee and others No. 1 Lucy Damon, Section 24, is down at 2,513 ft.; Wood County, Portage Township, Goodwill Oil & Gas Co. No. 1 Lester Shinew, Section 5, is down at 1,887 ft.

WESTERN KENTUCKY

OWENSBORO, Ky., May 22.—The Birk City field, which was under water for some time during the late winter and early spring, had two new McClosky lime wells in the past week on the Daviess County side of the field. Following were the completions and new work started in western Kentucky in the past week:

Daviess County, Thurston district: Snowden & McSweeney No. 1 C. H. Abel east 100 acres, moving in. No. 1 Abel south 100 acres, location. Cane Run school district: Cane Run Petroleum Co. No. 6 Rollie Ambrose, east tract, rigging up. W. E. Hupp and others No. 7 A. Bratcher, east tract, drilling at 150 ft. Cane Run Petroleum Co., No. 11 R. E. Jackson, drilling at 300 ft. Utica district: W. E. Hupp and others No. 2 C. DeLacy cored 9 ft. of Barlow sand, total depth 1,360 ft.; shot casing out of the hole; now fishing for tools. Delayed shot may have ruined the well. No. 3 Charles DeLacy cored Barlow sand, now drilling in. Daugherty & Ellis No. 4 J. A. Lett, estimated completed for 150 bbl. per day; a combination Jett and Jones sand well. J. C. Miller, trustee, No. 3 Gus Morgan, location. Birk City district; Fitzpatrick & Hayes No. 4 R. M. Hagan Estate, 200 bbl. a day from McClosky lime, total depth 1,880 ft. Jess Ashby and others No. 5 Mrs. C. E. Jagoe, 150 bbls. a day from McClosky lime, total depth 1,871 ft. Two miles north of Whitesville: Ellis & Ashby No. 1 Frank Litsey, drilling at 200 ft. Jolly district: Cleopatra Oil Co. No. 1 R. V. Nesmith, dry hole, total depth 2,265 ft.

Butler County, 1¾ miles northwest of Harreldsville: Hughes & Powers No. 1 E. E. Brown, spudding. Huntsville district: Butler County Oil Co. No. 2 Ora Brown Heirs, a 10-bbl. well in Jones sand, total depth 390 ft. Silver City district: Jess Ashby and others No. 1 Mrs. Birdie Cooper, 25-bbl. well in Jones sand, total depth 510 ft. Rochester district: A. H. Henry and others No. 6 Kyle Willis, location.

Henderson County, Corydon district: Sun Oil Co. and Kentucky Natural Gas Co. No. 3 Corydon Unit, dry hole, total depth 2,721 ft. Carter Oil Co. No. 1 King-Pritchett, dry hole, total depth 2,663 ft. Euterpe district: Imperial Oil & Gas Products Co. No. 6 Mrs. S. A. Freeman, old well drilled deeper to 2,208 ft.; acidized with 2,000 gal., now pumping 4 bbl. per hour.

Hopkins County, 4½ miles southeast of Madisonville: Central States Oil Co. No. 1 W. J. Cox Estate, pumped 6 bbl. per hour in a 5-hour test of Cunningham sand, total depth 2,090 ft. It has been acidized with 1,000 gal., but will be reacidized. No. 2 is a location.

Ohio County, Narrows district: Dehart & Likens No. 4 L. M. Askins, moving in. Friendship Church district: Andrew Teller, trustee, No. 7 Iva Board, drilling at 500 ft., Heflin district: J. C. Ellis and Antone No. 2 L. E. Charlet 50 acres, drilling at 150 ft. Taffy district: Dehart and others No. 10 A. J. Early, dry hole through Jett sand. J. C. Ellis and others No. 9 Feemster & Wimsatt, moving in. Ohio Oil Co. No. 23 J. N. Kirk, 10 bbl. a day from Stray sand, total depth 501 ft. No. 24 is a location. Dundee district: W. E. Neal and others No. 2 Russell Mattingly, drilling at 300 ft. Six miles east of Hartford: Tom Grimm Oil Co. No. 1 Delia Vance, drilling at 400 ft.

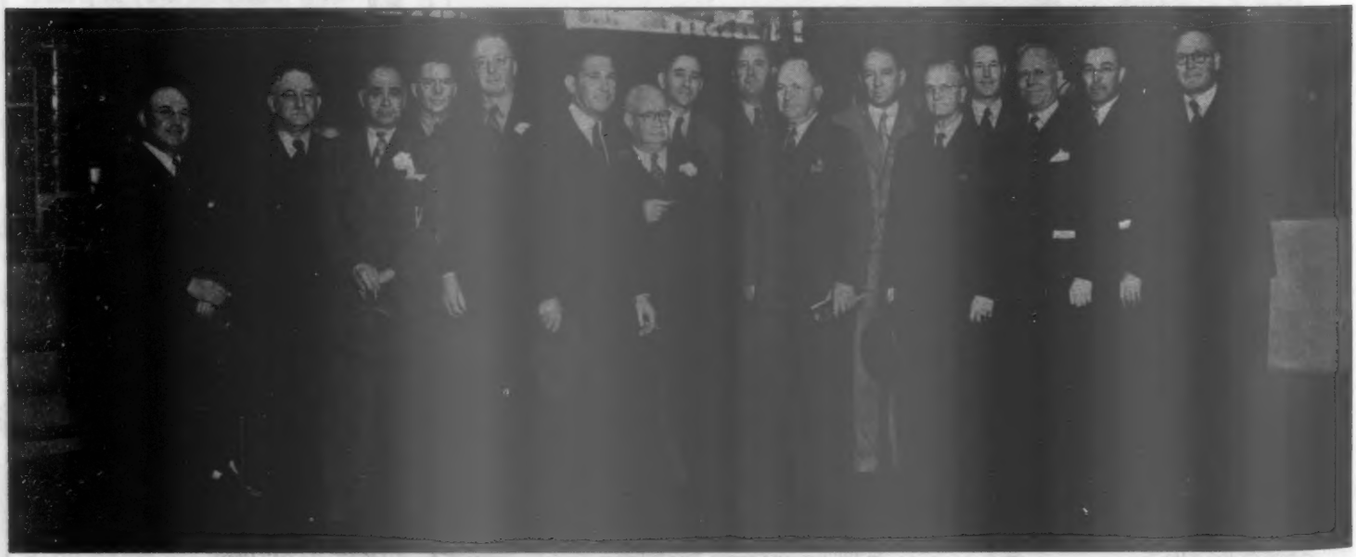
EASTERN KENTUCKY

ASHLAND, Ky., May 22.—One oil completion and two that resulted in dry holes are included in the report of eastern Kentucky activities this week. Price Fraley completed No. 1 Robert Gray on South Bend in the Ida May district of Lee County, daily production 20 bbl. The same operator was drilling No. 2 on the same land.

Ray Estin drilled a dry hole in No. 30 R. J. McLyn

(Continued on Page 104)

BOARD OF DIRECTORS, CALIFORNIA OIL AND GAS ASSOCIATION, AT SAN FRANCISCO FAIR



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California Field Report

By L. P. STOCKMAN

New Allowable Formula Will Become Effective on June 16

LOS ANGELES, Calif., May 22.—After spending several weeks surveying its probable effect, the Central Committee of California Oil Producers, official curtailment group, adopted the new uniform allowable formula and voted to make it effective June 16. This method of allocation is based on the ability of a well to produce, and under projected conditions each well will receive an allowable based on a minimum and a graduated scale computed on depth. The new plan establishes a minimum daily production of 10 bbl. for any well capable of producing that amount and a maximum of 250 bbl. for the highest rated well. The plan, which has been adopted unanimously, provides a large minimum for smaller wells and takes into account a formula which gives every well, based on depth, a uniform allowable. This plan will give the state an actual daily production, if all operators conform with its provisions, of 600,000 bbl.

The uniform method of establishing allowables has been under consideration for several weeks and should meet with general approval of operators because it recognizes the fundamental necessity of establishing some connection with drilling and producing costs and at the same time provides for the small pumping well which usually has a high lifting cost. The committee will make a comprehensive survey to determine what wells are capable of producing because only those capable of production will receive an allowable under the new plan. Many wells that have been shut in for several years have been dismantled and production equipment removed to other areas and thus in order to receive an allowable this equipment may have to be reinstalled unless some other method of determining the well's potential can be used. The new uniform system does not provide that pumping equipment must be in place but it does make a distinct provision that no well shall receive an allotment if the hole is in bad shape or the well incapable of producing. Several years ago, the curtailment committee decided to open up all wells in order to determine the state's potential with the result that state production showed a sudden increase. In order to eliminate such a condition, the present committee has decided that production tests shall only be for a very short period. In as much as it will be quite a job to determine production capabilities of all wells the committee will allow operators several months to make the necessary tests.

Montebello

The western extension of the Montebello field of Los Angeles Basin has become the hot spot following the rapid decline in drilling operations in the Lomita, Eshelman and Walnut sections of the Torrance field and will show increased development within 10 days. Preparations are under way to start 15 wells in the eastern and western parts of the extension and especially in the southeastern portion of the field. Very little progress has been recorded in securing compliance with the curtailment program on the part of Montebello operators but some definite action will be taken at once to bring production down to specified allotments. Gas waste has become a problem in the western end of the Montebello field with the result that both the California Department of Natural Resources and police officials of the city of Montebello are preparing to crack down unless something is done at once. The city of Montebello passed a regulatory measure some time ago prohibiting gas waste, along with making it obligatory to obtain permits before undertaking drilling operations. Up to the present, persuasion methods have been employed but from now on officials will demand strict compliance. There is no way of regulating production of crude oil except by mutual agreement as long as the gas-oil ratio is low, but whenever the ratio hits a high spot it is susceptible of regulation by both state officials and the police of Montebello.

The development program in the western extension of the Montebello field is of special importance because that area received scant attention during the life of active drilling in the Torrance field, but now that work in the latter area is no longer profitable some of the operators have moved over into Montebello. The southeastern end of the western extension is the most active but this work may eventually shift westward where the limits of commercial production have not yet been defined. On the basis of work undertaken to date this new area will not compare in any way with the productive eastern section of the Wilmington field. In the Wilmington field the productive Ranger and upper and lower Terminal zones are exceptionally thick, indicative of long-lived production, whereas the zones developed to date in the western extension of the Montebello field consist of relatively thin zones. All zones down to the lower member of the sixth and seventh zone in the western extension have become badly depleted and thus operators going into the field at present are starting work under a handicap. Unless a deeper and more productive zone is developed there will be more money spent for drilling than is taken out of the ground in the form of oil and gas in the western end of the field. These thin productive zones contain only a certain amount of crude oil and it has been proved time and time again a 100-ft. zone can not sustain intensive development under present unrestricted development. St. Helens Petroleum Co., Standard Oil Co. and Union Oil Co. which hold large acreage should make money as a result of drilling and productive activities in the Montebello field but most of the remainder will do well to even secure a return of the invested capital. Development work started in this field in the fifth zone and then progressively from zone to zone as production failed to hold up. The seventh zone is now the objective of most operators and while only a few wells have been finished in that horizon it may be assumed that it too will be relatively thin and thus show a short flowing life.

The flowing life of Hathaway Oil Co. No. 1 Dore, in the extreme southwestern end of the Montebello structure, indicates how quickly these zones decline. This well was finished in what is believed to be the lower member of the seventh zone and despite the fact that no well has been completed in that zone close to No. 1 Dore, it was necessary early last week to install a pumping jack. The gas has been gradually declining for several weeks, indicating that if one well can have such an effect on a productive horizon in such a relatively short time several wells will find pressure gone in a shorter time. Only one

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	May 13		May 6			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	185,791	140,394
Fuel oil	64,290	9,184	94,580	13,511	816,396	.....
Diesel and gas oil	.....	.....	.....	.....	163,501	.....
Gasoline	.....	.....	252,481	36,069	1,013,805	1,040,057
Kerosene	.....	.....	.....	.....	122,200	199,453
Foreign exports —						
Crude oil	215,122	30,732	376,681	53,812	5,352,983	9,539,023
Fuel oil	143,146	20,449	171,209	24,458	2,864,287	2,918,859
Diesel and gas oil	157,401	22,486	192,214	27,459	2,262,314	2,115,692
Gasoline	154,425	22,061	107,380	15,340	3,046,803	2,546,137
Kerosene	36,645	5,235	.....	.....	621,586	499,574
Lubricants	.....	.....	.....	.....	42,034	.....
Coastwise-domestic—						
Crude oil	209,511	29,930	161,935	23,134	4,513,150	4,432,387
Fuel oil	115,127	16,447	222,095	31,728	3,550,002	4,172,995
Diesel and gas oil	72,451	10,350	54,526	7,789	979,302	642,206
Gasoline	269,698	38,528	490,966	70,138	5,298,370	5,566,407
Kerosene	.....	.....	16,417	2,345	165,555	118,286

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	61,281	.....
Diesel and gas oil	.....	.....	.....	.....	69,550	178,662
Gasoline	.....	.....	.....	.....	.....	9,499
Asphalt	74,226	10,604	.....	.....	214,652	284,401
Lubricants	3,001	429	.....	.....	11,184	3,009
Foreign exports—						
Crude oil	102,476	14,639	265,169	37,881	2,043,619	2,157,698
Fuel oil	.....	.....	.....	.....	885,259	832,223
Diesel and gas oil	48,778	6,968	18,587	2,655	772,910	599,508
Gasoline	185,980	26,569	.....	.....	1,286,106	1,676,440
Kerosene	2,140	306	.....	.....	305,252	301,247
Lubricants	1,250	179	9,547	1,364	179,506	149,473
Other finished oil	.....	.....	.....	.....	352	.....
Coastwise-domestic—						
Fuel oil	52,190	7,456	80,115	11,445	2,160,260	2,386,923
Diesel and gas oil	15,248	2,178	20,210	2,887	360,692	583,376
Gasoline	119,914	17,131	170,258	24,323	2,425,728	2,332,991
Kerosene	12,781	1,826	5,587	798	250,794	257,363

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	185,791	140,394
Fuel oil	64,290	9,184	94,580	13,511	877,677	.....
Diesel and gas oil	.....	.....	.....	.....	233,051	178,662
Gasoline	.....	.....	252,481	36,069	1,013,805	1,049,556
Kerosene	.....	.....	.....	.....	122,200	199,453
Asphalt	74,226	10,604	.....	.....	214,652	284,401
Lubricants	3,001	429	.....	.....	11,184	3,009
Foreign exports—						
Crude oil	317,598	45,371	641,850	91,693	7,396,602	11,696,721
Fuel oil	143,146	20,449	171,209	24,458	3,749,546	3,751,082
Diesel and gas oil	206,179	29,454	210,801	30,114	3,035,224	2,715,200
Gasoline	340,405	48,629	107,380	15,340	4,342,909	4,222,577
Kerosene	38,785	5,541	.....	.....	926,838	800,821
Lubricants	1,250	179	9,547	1,364	221,540	149,473
Other finished oil	.....	.....	.....	.....	352	.....
Coastwise-domestic—						
Crude oil	209,511	29,930	161,935	23,134	4,513,150	4,432,387
Fuel oil	167,317	23,902	302,210	43,173	5,710,262	6,559,918
Diesel and gas oil	87,699	12,528	74,736	10,677	1,339,994	1,225,582
Gasoline	389,612	55,659	661,224	94,461	7,724,098	7,899,398
Kerosene	12,781	1,826	22,004	3,143	416,349	375,649

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.
Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Ellwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Santa Paula*	Kettleman Hills	Wheeler Ridge	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.85	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.88	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

new well was completed in the western extension field in the past week, but several wells are nearing the productive stage and should begin tanking oil shortly. The week's completion was Standard Oil Co. No. 5 Whitehead which was finished flowing 720 bbl. of 27.9-gravity oil, cutting 4 per cent, and 760,000 cu. ft. of gas per day from the seventh zone with bottom of the hole at 7,185 ft. This well, in the western end of the extension, and which has an elevation of 302 ft. above sea level, was finished with an 8⅝-in. water string landed at 7,040 ft. and was brought in flowing through a 26/64-in. bean behind which it showed a tubing pressure of 275 lb. and a casing pressure of 450 lb. Union Oil Co., which is starting four new wells, has a rig up for No. 32 La Merced which will be a direct offset of Wood-Callahan's recent completion flowing 1,400 bbl. per day from 7,575 ft. New wells are being started in the Montebello field by Beverly Montebello Oil Co., Mission Oil Corp., Star Petroleum Co., Union Oil Co., Standard Oil Co., St. Helens Petroleum Co. and a number of other operators. It is also quite likely that the Texas Co. and Vulcan Oil Co. may also start additional wells.

Wilmington

The Long Beach Harbor section of the Wilmington field of Los Angeles Basin is showing a revival of drilling due primarily to tideland development and completions should show an increase within the next few weeks. Long Beach Oil Development Co. is now the leasing operator with seven strings of tools in operation, five derricks up and locations staked for 10 additional wells. All wells of this company are scheduled to be bottomed beneath the tideland accumulation in such a way that all have normal drainage.

During the past week, two new wells and one recompletion were put on production in the Wilmington field. The latter was V. R. Wilbur No. 2 Santa Fe which was returned to production pumping 100 bbl. of 14.9-gravity oil, cutting 10 per cent, from the Ranger zone with bottom of the hole at 3,700 ft., after the hole had been cleaned out and finished with 761 ft. of 5½-in. liner including 336 ft. of 7¼-in. Nelson gravel-packed liner. Production appears to be cleaning up and the cut may be substantially reduced after several days production has been recorded. Union Pacific Railroad Co. completed No. 106 flowing 910 bbl. of 27.4-gravity oil per day from the Terminal zone with bottom of the hole at 4,078 ft. Richfield Oil Corp. closed the week by completing No. 30 Pacific Dock flowing 605 bbl. of 18.1-gravity oil per day from the Ranger zone with bottom of the hole at 3,000 ft. and the 8⅝-in. water string cemented at 2,907 ft. The well was brought in flowing through a 32/64-inch bean and was cut back to the prescribed allowable immediately subsequent to completion.

Coalinga

The substantial production being found in the Southeast Coalinga field and discovery of a new productive area north of this area have had a tendency to center attention in this section of the state with the result that several large leases have already been recorded. A few miles south of the Southeast Coalinga or Gatchell field, Superior Oil Co. is drilling a wildcat that has made 5,335 ft. of hole in about seven days. From now on drilling operations will be slowed up due to the necessity of coring from about 5,500 ft. to bottom. This wildcat is No. 1 Pleasant Valley Farming in Section 22-20-15, and while it appears to be out of line with the two other areas, it has considerable merit in as much as the Eocene seacoast should turn somewhere in that area. North of the Southeast Coalinga field, Shell Oil Co. has been making good progress in No. 48-30 Port Costa in Section 30-17-16 but has not yet found a sand thick enough to justify a production test. The well is in lower Temblor which was logged at 6,922 ft. Northeast of Shell's wildcat, the Texas Co. is making hole in No. 1 Loescher in Section 12-17-16 but is not yet deep enough to prove interesting.

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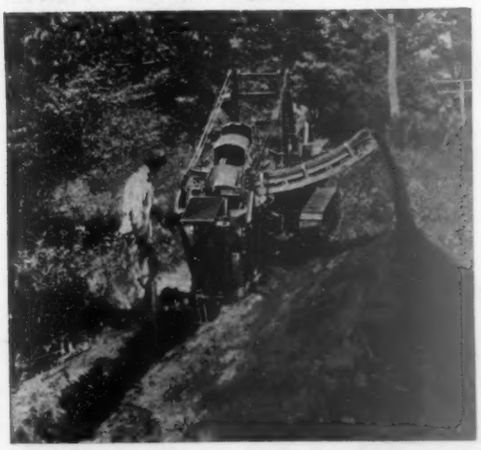

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CLEVELANDS

During the past week, two excellent flowing wells were completed. One of the next wells to be given a production test is expected to be No. 1 Exeter fee of the Texas Co. which has been delayed for several weeks with a fishing job but which is once again going ahead. The new wells finished were Petseahon No. 62-7-F in Section 7-20-16 completed flowing 1,619 bbl. of 30.8-gravity oil and 1,000,000 cu. ft. of gas per day from the Gatchell zone at 8,020 ft. and Standard Oil Co. No. 73-13-C in Section 13-20-16 which was brought in flowing 3,111 bbl. of 32.1-gravity oil and 750,000 cu. ft. of gas per day from 7,070 ft. The former well which was brought in flowing through a 31/64-in. bean with a tubing pressure of 1,100 lb. and a casing pressure of 1,400 lb. topped the oil sand at 7,541 ft. and reached the top of the Glauconitic sand and Kreyenhagen at 7,515 ft. and 6,352 ft. respectively. The hole was finished with a 9⅝-in. water string at 8,750 ft. and 549 ft. of 7-in. liner including 481 ft. of perforated. Standard No. 73-13-C which extends the productive limits of the field at least one location southwest topped the oil sand at 6,807 ft. and found the base of the Gatchell zone at 7,068 ft. Bandini Petroleum Co., a subsidiary of Wilshire Oil Co., spudded in No. 48-18 Webb in Section 18-19-15 early in the week and has made good progress since the bit began making hole.

Wasco

Standard Oil Co. completed another excellent producing well in the Wasco field of Kern County when No. 8-2-B Kern County Land in Section 17-27-24 was brought in flowing 7,500 bbl. of 37.3-gravity oil and 1,600,000 cu. ft. of natural gas per day from the Rio Bravo zone with bottom of the hole at 13,135 ft. This new well which was finished with a 7-in. water string landed at 13,100 ft. topped the Rio Bravo zone at 13,120 ft. and thus has 15 ft. of formation open to production. The well extends the productive limits of the field 2,500 ft. south and opens up additional locations for development. Standard Oil Co., incidentally, controls all of Sections 17 and 18 and thus should benefit from extension of the field to the south. Northwest of Standard's new well, No. 8-2-B Kern County Land, George Getty, Inc., spudded No. 1 Jannsen in Section 7-27-24 and is making good progress. This well, based on developments in the field to date, appears almost sure of resulting in commercial production a few months hence when the Rio Bravo zone is penetrated.

Torrance

During the current week two wells were completed in the Eshelman section of the Torrance field but neither showed large production. No. 2 Torrance of Lone Star Oil Co. was good for 170 bbl. of 26.9-gravity oil cutting 5 per cent on a natural flow from a depth of 5,170 ft. No. 1 Angelich of A.B.C. Oil Co. was completed, pumping 105 bbls. of 25.6-gravity oil cutting 18 per cent from the lower zone. This well was bottomed at 5,200 ft. but was only redrilled to 5,165 ft. from which depth it is producing. This well is at 240th Street and Eshelman and No. 2 Torrance of Lone Star Oil Co. is located at 238th Street and Eshelman. There are only nine wells drilling in the Torrance field.

San Joaquin Valley

Standard Oil Co. completed a good flowing well in the Kettleman North Dome field of Fresno and Kings counties when No. 81-19-Q in Section 19-22-18 was brought in flowing 2,200 bbl. of 38.1-gravity oil and 15,000,000 cu. ft. of gas per day through two 96/64-in. beans from the Temblor zone, with bottom of the hole at 7,340 ft. This new well which has an elevation of 1,179 ft. above sea level was finished with a 9⅝-in. water string at 7,288 ft. and shows a tubing pressure of 1,500 lb. and a casing pressure of 1,600 lb. Kenda's deep test in this field, No 54-24-H in Section 24-21-16 has reached a depth of 10,870 ft. and its present depth shows an oil-stained sand which may have production possibilities.

In the Fruitvale field of Kern County, No. 1 Bellevue of Western Gulf Oil Co. showed only small production when on the beam following completion at 3,931 ft. and it is questionable whether it will prove commercially profitable. This well pumped 102 bbl. of 18.2-gravity oil cutting 20 per cent during the initial 24 hours following completion. Base of the Etchegoin was logged at 3,508 ft. and the hole was finished in the Kernco zone with an 8⅝-in. water string at 3,877 ft. and 93 ft. of 6⅝-in. liner including 44 ft. of perforated landed at 3,919 ft.

In the McKittrick field, Kern County, F. E. Gates got a gas well when No. 2 Laymance in Section 20-30-22 was turned loose following completion at 1,474 ft. as it came in flowing 500,000 cu. ft. of wet natural gas and water. This well was finished with an 8⅝-in. water string landed at 1,046 ft. and 442 ft. of 6⅝-in. liner including 398 ft. of perforated landed at 1,464 ft. and 1,358 ft. of 3-in. tubing. In the Kern River field, Hast Oil Co. cleaned out No. 5 Kern and returned it to production pumping 5 bbl. of 14.1-gravity oil per day from 510 ft. This field is rather badly depleted and only small wells such as this may be expected. Tide Water Associated Oil Co. which is drilling a joint test in conjunction with Continental Oil Co. in Section 7-30-26 appears to have found an oil sand that may have production possibilities. This well, No. 35-E Kern County Land, has cored 48 ft. of oil sand in the Stevens interval and an 8⅝-in. water string has been landed and cemented at 8,300 ft. The well is located in the Strand section of Kern County, about 1 mile northeast of the Canal field. Top of the oil sand was cored at 8,308 ft. and at 8,364 ft. the oil sand graded into a gray sand. On a 20-minute formation test at 8,290-8,364 ft. the recovery consisted of 55 stands of gassy oil and oily mud with no free water, indicating that the gray sand in the bottom of the hole apparently carries gas. The well is on a seismograph high between the Canal and Ten Section field. The first test in the area was Continental No. 1-E Kern County Land in Section 17-30-26 about 1 mile southeast, and which cored 50 ft. of oil sand in the Stevens interval at 8,183-8,233 ft., but which on a production test developed water.

In the Wheeler Ridge field of Kern County in the southern end of San Joaquin Valley, Richfield Oil Corp. appears to have an oil sand at 11,002 ft. that shows every indication of resulting in commercial production. This can only be determined on an actual production test but this oil sand is without doubt the best showing the well has had. Present formation is San Emigdio of Oligocene age, and the well at 11,002

(Continued on Page 104)

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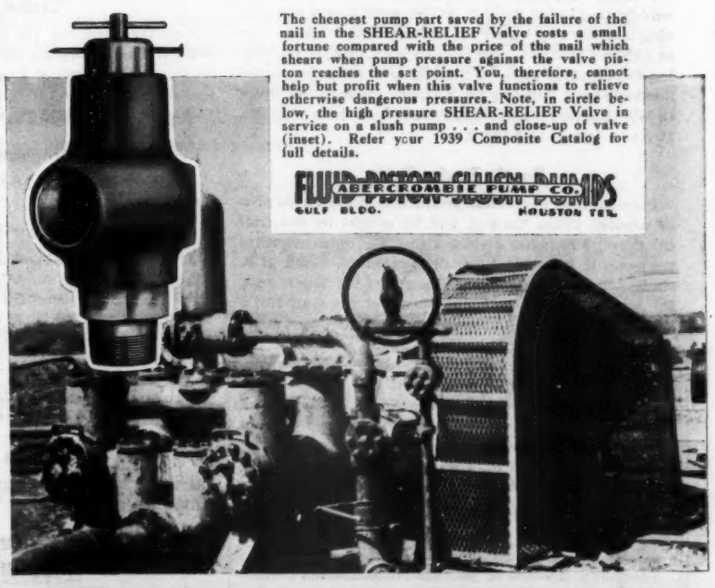
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Stonewall's Pool Prospect; New Wildcats in 5 Counties

FORT WORTH, Tex., May 22.—Completion of a new pool opener in Stonewall County, together with continued testing of a prospective Yoakum County discovery well and several new wildcat locations, featured the week's activity in the West Texas area.

Helmerich & Payne completed the once temporarily abandoned Forest Development Corp. No. 1 Boyd, Stonewall County wildcat in Section 45, Block D, H.&T.C. Survey, for 188 bbl. of oil and 33 bbl. of water in 24 hours. The test was drilled by the Forest Development Corp. several weeks ago, found unproductive, and temporarily abandoned. Oil was noticed to have spread over surrounding land through a leak in the tubing which had been connected to a storage tank for initial testing purposes. The well was acquired by Helmerich & Payne, reworked, and completed for the second pool opener in the county. Production is from lime at 4,827 feet. Last summer Stonewall County received its first oil pool when W. I. Southern, Inc., compelted No. 1 Carlisle for 150 bbl. per day from 5,186 ft.

Stonewall County received a new wildcat when Forest Development Corp. and King Drilling Co. staked location for their third exploratory test in the county. Location is on the Moreland lands, Section 183, Block D, H.&T.C. Survey. It is about 6 miles east of the two-well Carlisle pool. Another wildcat to be started in the county by June 1 is by Shell Oil Co., Inc., in Section 143, Block 1, H.&T.C. Survey, 1 mile northwest of the dry hole drilled by General Crude Oil Co. last summer.

Yoakum County's indicated pool opener, Shell Oil Co. No. 1 Waples-Platter, Section 616, 2 miles northeast of the Bennett pool, is being tested on the pump. This prospective producer, which indicates either a new pool or an extension to the Bennett pool, is bottomed at a plugged-back depth of 5,312 ft. No gages had been reported on the well up to the close of the week.

In Gaines County Humble Oil & Refining Co. No. 1 W. T. Caswell, Section 10, Block 24-A, P.S.L. Survey, was drilling below 3,557 ft. as the week closed and running considerably higher on all important markers. Also in Gaines County, Atlantic Refining Co. and Osage Drilling Co. reported gage on their ¼-mile extension to the Seminole pool. This was No. 2 Tippett, Section 266, Block G, W.T. Survey, which flowed 971 bbl. of oil in 23 hours. Pay was topped at 5,100 ft.

South Basin Area

Permian lime pay, found productive in the Tubbs area of western Crane County, will be sought by the Gulf Oil Corp., which has staked a test 2½ miles north of the pool. It is No. 11 Waddell, Section 20, Block 21-B, P.S.L. Survey. While 2½ miles north of the Tubbs area, the test is only 1¼ miles northeast of the Gulf No. 3 Waddell, scheduled Tubbs-pay test, which was abandoned at 4,190 ft. several months ago.

Several wildcats in Ector County were attracting considerable interest as the week closed. J. T. Roberts, Russell C. Conkling and J. M. White No. 1 E. R. Thomas Estate, in the western part of the county, is preparing to run an electrical survey after which 7-in. casing may be cemented at 3,848 ft., and cable tools moved on for drilling the plug. The test is reported to be running about 200 ft. higher than nearby dry holes.

WEST CENTRAL TEXAS

Possibility of a new oil pool for Throckmorton County and the staking of several wildcats in five counties featured the development in the West Central Texas district.

A new pool in southwestern Throckmorton was in prospect at Industrial Oil Co., A. G. Bender and others No. 1 Tom Morrison. The well, which is 75 ft. south of a shallow well completed on the same tract, was reported to have sprayed gas with some oil when a sand was uncovered at 3,400 ft. Operators have shut the well in to run casing as there is 1,600 ft. of open hole in the test and operators feared a cave.

Exporation in Jones County was further increased when two wildcat locations were announced. F. E. Shaheen, wildcatter who opened a shallow pool in the county last year, will drill both tests. First to start will be in the northwest quarter of Section 20, Block 16, T.&P. Survey, on the Redford estate. It is 1⅛ miles east of the two-well Akard pool and 3 miles west of the old Condor pool. Shaheen's other wildcat will be in the Minter lands of Section 41, Block 15, T.&P. Survey, 3 miles north of the town of Hawley. Both will seek Swastika sand production at around 2,400 ft.

Production limits on the northeast side of Jones County's Griffin pool were apparently defined when Iron Mountain Oil Co. abandoned its outpost in the W. P. Cockrell farm, Section 194, at a total depth of 3,314 ft. The test missed the 3,200-ft. pay zone of the pool proper.

Callahan County's new pool of several weeks ago has received its second test. L. A. Warren, Cisco, and others had started No. 1 Clinton Estate as the north offset to the Warren No. 1 Cozart, discovery well, which was completed for 40 bbl. of oil daily from 1,675 ft.

Southeast Haskell County has been given a new wildcat location by Marland-Drake Oil Co. The test is on the Cebb lands in Section 96, H.&T.C. Survey, and about 3 miles north of the Fain-McGaha Oil Corp. and Kendrick No. 1 Hendrick, small discovery of several months ago.

WEST TEXAS COMPLETIONS
(24-hour gages)

Andrews County

Anderson & Prichard Oil Co. No. 4 Cowden, location abandoned. Humble Oil & Refining Co. No. 61 J. S. Means, 4,410-4,500 ft., 1,692 bbl.

Crane County

Gulf Oil Corp. No. 192 J. T. McElroy, 2,737-2,930 ft., 613 bbl. Parker Drilling Co. No. 2 King-Texas Co., 2,124-45 ft., 408 bbl. Sinclair Prairie Oil Co. No. 3 Tubbs, dry and abandoned at 6,167 ft. Sinclair Prairie Oil Co. No. 4 University, 3,585-3,602 ft., 1,206 bbl.

Crockett County

Gilcrease Oil Co. No. 8-16 University, 1,365-1,400 ft., 22 bbl.

Ector County

Arkansas Fuel Oil Co. No. 2-B Johnson, 4,106-4,200 ft., 731 bbl. Atlantic Refining Co. No. 2 W. C. Cochran, 4,080-4,259 ft., 163 bbl. Broderick & Calvert No. 17 Foster, 4,090-4,185 ft., 1,328 bbl. Cities Service Oils No. 6-D Cummins, 4,175-4,235 ft., 836 bbl. Landreth Production Corp. No. 1-A F. Cowden, dry and abandoned at 4,617 ft. Parker Drilling Co. No. 1 McDonald, 3,340-3,678 ft., 2,528 bbl. Rushwold Oil Co. No. 2 Woods, 4,200-4,386 ft., 4,762 bbl.

Gaines County

Atlantic and Osage Drilling Co. No. 2 J. L. Tippett, 5,100-5,260 ft., 970 bbl.

Hockley County

Texas Co. No. 1-C Mallett, 4,968-5,050 ft., 550 bbl.

Howard County

Continental Oil Co. No. 14-A Clay, 3,102-3,238 ft., 305 bbl. Continental Oil Co. No. A-1-S Settles, dry and abandoned at 1,360 ft. Eastland-Ambassador No. 1 O'Daniel, 2,600-2,827 ft., 412 bbls. F. W. Merrick, Inc., No. 8-B Chalk, 2,873-2,938 ft., 648 bbls. Moore Brothers No. 8-3 M. H. O'Daniel, 2,635-2,812 ft., 277 bbl.

Pecos County

British American Oil Co. No. 19 Payton, 2,032-83 ft., 251 bbl. Cardinal Oil Co. No. 2-B-45 White & Baker, 1,700-52 ft., 27 bbl. Landreth Production Corp. No. 4-H University, 1,619-49 ft., 125 bbl. Thomasson Production Co. No. 1 Notions, dry and abandoned at 1,943 ft. Union Oil & Mining Co. No. 4-D Magnolia, 1,795-1,852 ft., 270 bbl. Wotola Royalty Corp. No. 3 Byrne, location abandoned. C. P. Yadon No. 2 Jackson, 1,585-1,651 ft., 52 bbl.

Stonewall County

Forest Development Corp. No. 1 T. A. Ellison, dry and abandoned at 3,596 ft. Shell Oil Co., Inc., No. 1 T. K. Smith, location abandoned.

Upton County

Sahara Oil Co. No. 10 Baker-Republic, 2,266-70 ft., 250 bbl. Shell Oil Co., Inc., No. 10 Baker, 2,109-2,243 ft., 290 bbl. T. P. Coal & Oil Co. No. 34-A Lane, 2,121-28 ft., 257 bbl.

Ward County

Gulf Oil Corp. No. 118 Estes, 2,497-2,650 ft., 853 bbl. Luse & Ice No. 8 Blair, 2,035-93 ft., 190 bbl. Sinclair Prairie Oil Co. No. 15 Archenhold, 2,773-2,990 ft., 503 bbl.

Winkler County

J. T. Barnes No. 3 Crume, 3,297-3,351 ft., 609 bbl. Falcon No. 3-A McCutcheon, 3,272-3,405 ft., 414 bbl.; old well drilled deeper.

Yoakum County

Aloco Oil Co. No. 1 W. M. Johnson, 4,845-5,175 ft., 713 bbl.

WEST CENTRAL TEXAS COMPLETIONS
(24-hour gages)

Brown County

Brewer No. 1 Scott, temporarily abandoned location. Bruce No. 1 Mauldin, temporarily abandoned at 520 ft. Cox No. 1 Homlett, temporarily abandoned at 135 ft. Godwin & Wehr No. 1 Stone, dry and abandoned at 1,157 ft. Hamer No. 1 Kuteman, 1,195-1,208 ft., 20 bbl. Mitcham Brothers No. 4 Perry, 1,230-44 ft., 10 bbl.

Callahan County

Bayou Oil & Gas Co. No. 1 Jones, dry and abandoned at 1,700 ft.

Coleman County

Smith No. 1 Hays Estate, abandoned at 260 ft.

Eastland County

Lone Star Gas Co. No. 1 Phillips-Graves, 3,860-95 ft., 2,000,000 cu. ft. of gas.

Jones County

Condon Petroleum Co. No. 21 Sayles, 1,931-52 ft., 321 bbl. Dennis No. 1 Wooten, junked and abandoned at 1,765 ft. Healey & Walters No. 8 Daughtry, 1,839-1,960 ft., 378 bbl. Herring and others No. 1 Guitar, dry and abandoned at 2,245 ft. Lewis Production Co. No. 2 Mouzler, 3,260-73 ft., 156 bbl. in 4 hours. Quality Production Co. No. 1 Connell, dry and abandoned at 2,364 ft. Rhodes & Higher No. 2 Bickley, dry and abandoned at 3,650 ft. Roberts No. 4 Grayson, 3,169-70 ft., 15 bbl.; old well drilled deeper. Sandy Ridge Oil Co. No. 7 Steffens, 1,900-01 ft., 311 bbl. Sprouls No. 2 Nichols, junked and abandoned at 800 ft. Ungren & Frazier No. 1 Griffin, 3,225-45 ft., 832 bbl. in 18 hours.

Shackelford County

Baker No. 3 Davis, dry and abandoned at 1,645 ft.

Thomas Wittmer No. 4 Lanes, 878-91 ft., 1,620,000 cu. ft. of gas.

PANHANDLE FIELD COMPLETIONS

(24-hour gages)

Hutchinson County

J. C. Alexander No. 2 Moore-Langdon, 3,675-95 ft., 154 bbl. Stansylvania Oil Co. No. 7 B. Wilson 2,975-3,060 ft., 457 bbl. Stansylvania Oil Co. No. 8 B. Wilson, 2,960-3,030 ft., 454 bbl. Whittington & Rubin No. 3 J. A. Whittenburg, 2,900-3,065 ft., 15,716,000 cu. ft. of gas.

Mid-Continent Crude Runs

(Continued from Page 69)

Company and location—	Daily capacity	Av. dly. runs— May	Apr.
Stanolind Oil & Ref. Co., Superior	5,000	2,000	2,500
Total	62,750	42,700	41,700

*Shut down.

ARKANSAS

Berry Asphalt Co., Waterloo	2,000	1,300	1,400
Henry H. Cross, Smackover	6,000	4,000	2,500
Lion Oil Ref. Co., El Dorado	17,000	13,100	12,000
Macmillan Pet. Corp., Norphlet	2,500	2,000	2,000
Root Ref. Co., El Dorado	10,000	7,000	7,000
Stephens Ref. Co., Stephens	700	500	500
Total	38,200	27,900	25,400

NORTH CENTRAL TEXAS

Bryson Pipe Line & Ref. Co., Bryson	2,000	1,250	1,250
Bryson Ref. Co., Inc., Bryson	1,500	1,250	600
Coleman Ref. Co., Coleman	1,000	400	400
Continental Oil Co., Wichita Falls	6,000	3,300	3,300
Denver Prod. & Ref. Co., Gainesville	3,000	(*)	(*)
Falls Ref. Co., Wichita Falls	2,500	500	500
Gratex Ref. & Fuel Oil Co., Graham	300	300	285
Gulf Oil Corp., Fort Worth	8,000	6,200	5,800
Hightower Oil & Ref. Corp., Brownwood	750	300	300
Jacksboro Ref. Co., Jacksboro	400	250	250
La Salle Pet. Co., Burkburnett	3,000	1,000	1,000
Mankins Ref. Co., Mankins	1,500	1,000	1,000
Magnolia Pet. Co., Fort Worth	7,500	5,000	5,000
Muenster Ref. Co., Muenster	400	400	400
North Texas Ref. Co., Gainesville	600	300	300
Ohio Oil Co., Fort Worth	5,000	4,000	4,000
Olney Oil & Ref. Co., North Olney	3,500	1,800	1,000
Panhandle Ref. Co., Wichita Falls	4,200	3,000	2,700
Panhandle Ref. Co., Lueders	1,500	1,000	1,000
Taylor Ref. Co., Taylor	1,000	600	600
Texas Pacific Coal & Oil Co., Caddo	800	600	600
Tucker Oil Co., Burkburnett	250	160	200
W. T. Waggoner Est., Vernon	4,000	3,500	3,500
Total	64,400	36,110	33,985

*Shut down.

EAST TEXAS

Beacon Oil & Ref. Co., Henderson	4,500	(*)	(*)
Clay Ref. Co., Arp	3,500	(*)	(*)
Danciger Refs., Inc., Longview	6,000	(*)	(*)
East Texas Ref. Co., Longview	6,000	5,200	5,000
Hurricane Pet. Corp., Overton	5,000	2,875	2,875
Hurricane Pet. Corp., Arp	3,300	1,900	1,900
Lacy Ref. Co., Kilgore	3,000	2,000	2,300
Magnolia Pet. Co., Corsicana	5,000	4,200	4,200
McMurrey Ref. Co., Tyler	10,000	5,000	4,800
Paluxy Asphalt Co., Talco	5,000	2,500	2,500
Premier Oil Ref. of Texas, Gregtown	4,000	3,000	3,000
Southport Pet. Co., Kilgore	4,000	3,900	3,000
Talco Asphalt & Ref. Co., Mount Pleasant	7,500	5,000	5,000
Texas Co., Dallas	16,000	8,000	8,000
Texas Oil Products Co., Gladewater	3,000	1,000	1,500
Tower Ref. Co., Overton	3,500	(*)	(*)
Utah Ref. Co., Kilgore	2,000	(*)	(*)
Total	96,800	43,675	44,075

*Shut down.

WEST TEXAS AND PANHANDLE

Aero Gas & Ref. Co., Fort Stockton	350	250	250
Coltex Ref. Co., Colorado	12,500	8,000	8,000
Cosden Oil Co., Big Spring	12,500	10,500	10,500
Danciger Refs., Inc., Pampa	6,500	5,000	5,400
Danube Oil Corp., Borger	1,200	800	800
Farmers Ref., Lubbock	500	250	250
Gulf Oil Corp., Sweetwater	7,000	5,500	6,800
Howard County Ref. Co., Big Spring	2,000	1,000	650
Moutray Oil Co., Hawley	1,400	700	850
Onyx Ref. Corp., Hawley	3,000	1,800	1,800
Panhandle Ref. Co., Kings Mill	2,500	1,400	1,200
Payward Ref. Co., Shamrock	600	500	500
Phillips Pet. Co., Borger	35,000	25,000	24,150
Post Refining Co., Rotan	800	500	500
Shamrock Oil & Gas Corp., Sunray	3,000	2,250	2,250
Stamford Ref. Co., Stamford	450	450	400
Shamrock Oil & Gas Corp., Lefors	1,600	1,200	1,200
Standard Oil Co. of Texas, El Paso	14,000	8,500	8,500
Star Light Ref. Co., Ballinger	1,000	500	500
Texas Co., El Paso	2,000	1,500	1,500
Texas Co., Amarillo	6,000	3,000	3,000
Western Ref. Co., Fort Stockton	1,000	750	750
Wickett Pet. Co., Wickett	3,500	2,500	2,500
Total	121,800	81,850	82,250

SOUTHWEST TEXAS

Border Oil & Ref. Co., Sullivan City	1,000	400	400
Eggleston Oil Producers Co., Three Rivers	1,000	1,000	1,000
Humble Oil & Ref. Co., San Antonio	5,000	3,500	3,500
Magnolia Pet. Co., Luling	8,000	5,000	5,000
Majestic Ref. Co., Dale	500	(*)	100
Pettus Oil & Ref. Co., Pettus	1,000	900	850
Phoenix Ref. Co., San Antonio	1,200	1,500	1,500
Phoenix Ref. Co., Pettus	900	750	750
Pioneer Oil & Ref. Co., Somerset	2,000	750	750
Rado Ref. & Prod. Co., McAllen	800	500	600
Texas Co., San Antonio	5,000	3,000	3,000
Total	26,400	17,300	17,450

*Shut down.

Oklahoma Fields

(Continued from Page 84)

In Lincoln County, Wilcox Oil & Gas Co. No. 28 Sac and Fox, SE SE SW Section 15-14-6, and same company's No. 7 Fitch, NE NW NE Section 15-14-6, were locations in the Sac and Fox pool.

Southern-Southwestern

West Oak Gas Co. No. 1 Powell, NW NW SW Section 11-9-25w, Erick field, Beckham County, was plugged back from 3,550 ft., and produced 14,861,000 cu. ft. of gas daily.

Indian Territory Illuminating Oil Co. No. 1 Hatler, C SW NE Section 32-2s-17w, an old well in the Frederick district, Tillman County, total depth 5,169 ft., was plugged back and pumped 4 bbl. of oil daily.

Northern Drilling Co. No. 2 Van Vector, NW SE NW Section 25-8-22w, Beckham County, was a machine.

In Jackson County, Hal Vaughn No. 3 Stoker, SW SE SW Section 11-1n-20w, Altus field, was rigging rotary tools; R. O. Ray and others No. 3 Ronald, NE

A LOW COST Measuring Line Reel!

TYPE G—for 5,000 foot Wells

A low cost, sturdy, compact, measuring unit, with self-contained gasoline engine, that weighs only 275 lbs., with 5,000 ft. of line on the drum; two men can easily carry it. Unit will fit in back of small coupe. No changes or special mountings required. Length 32 in., width 19 in., height 17 in.

Capacity 6,000 ft. of 0.66 line. Ball bearing equipped throughout. Special type clutch prevents sudden jolt on line and drum when power is applied. Besides regular combination clutch and brake the unit has an extra emergency brake.

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NW NW Section 5-1s-19w, Tipton pool, had dug pits.

Raizen Brothers No. 3 Carter, NW NW NE Section 16-4s-3w, Healdton field, Carter County, was drilling ahead.

East Texas Fields

(Continued from Page 81)

bbl. Reid and others No. 1 Mary A. Stephenson, 466 ft., dry. C. F. Schram and others No. 1 Dolph Summers, 1,339 ft., dry; No. 2 Dolph Summers, 198 ft., dry; No. 3 Dolph Summers, 205 ft., dry. Sussex Oil Corp. No. 20 C. J. Shumake, 1,132-42 ft., 20 bbls.; No. 21 C. J. Shumake, 1,373 ft., dry.

Jack County

Callahan & Jackson No. 2 Mary Hoefle, 650 ft., dry; No. 3 Mary Hoefle, 500 ft., dry; No. 4 Mary Hoefle, 413-20 ft., 10 bbl. R. D. Compton No. 4 Robert Wilson. 420 ft., dry. Danciger Oil & Refining Co. No. 7 Stella M. Ivey, 3,081-3,235 ft., 345 bbl. G. C. Gilmore No. 8 William Hanna, 520 ft., dry.

Cooke County

Schermerhorn Oil Co. No. 22 M. A. Kessler, 1,348-50 ft., 30 bbl. Seitz and others No. 1 W. A. Harris, 3,341 ft., dry.

Montague County

Staley Oil Co. No. 1 Nunley, 5,816 ft., dry. United Producers Co. and Continental Oil Co. No. 1 J. T. Langford, 2,884-2,938 ft., 85 bbl.

Wichita County

Deep Rock Oil Co. No. 3 L. Mackechney, 1,220 ft., dry. F. E. Marchand No. 21 H. Willis, 96-110 ft., 2 bbl. Seaboard Oil & Gas Co. No. 3 F. P. Warren, 715 ft., dry. Board of Minerals Development No. 8 State lands, 3,695-3,760 ft., 660 bbl. Consolidated Oil Co. No. 1 E. M. Barnes A, 3,958-97 ft., 1,248 bbl., an extension well; No. 6 Julia James, 3,934-84 ft., 936 bbl. H. S. Gray and others No. 1 H. S. Gray and others, 3,767-3,881 ft., 800 bbl. King Oil Co. No. 7 S. W. Wigley A, 3,768-3,860 ft., 765 bbl. King Oil Co. and others No. 13 Charles Pettit, abandoned location; No. 15, 3,708-50 ft., 610 bbl. P. G. Lake, Inc., No. 4 Mary E. Reilly, abandoned location. Montgomery and others No. 1 F. M. Weaber, 1,096-1,107 ft., 4 bbl. W. B. Omohundro No. 12 W. L. Hodges, 558-740 ft., 4 bbl. Panhandle Refining Co. No. 11 Reilly Griffin, abandoned location. Shell and Phillips No. 5 D. R. Preston A, 3,901-4,003 ft., 550 bbl. Venmex Oil Co. No. 8 State lands, 1,787-1,805 ft., 14 bbl.; No. 8-A State lands, 3,760-3,815 ft., 675 bbl.; No. 10-A State lands, 3,790-3,817 ft., 124 bbl.

Wilbarger County

Cosden Petroleum Corp. No. 3 W. T. Waggoner, 2,612-20 ft., 25 bbl. Maxwell & Bazzoon No. 2 C. Zipperle, abandoned location. Paradize Oil Co. No. 5 W. T. Waggoner B, abandoned location.

Young County

Bohner & Watson No. 9 Prideaux Brothers, 500-11 ft., 10 bbl. Head Roberts and others No. 1 J. P. Logan, 618 ft., dry. Horwitz & Oldom No. 9 F. C. Green, 618 ft., dry; No. 10 F. C. Green, 733 ft., dry. Long & Ray No. 1 G. A. Bills, 4,005-73 ft., 510 bbl. D. W. Power No. 4 J. F. Larimore, abandoned location. E. D. Willis No. 1 M. A. Stewart, 698 ft., dry. W. R. Worthington No. 1 R. L. Head, 1,140 ft., dry; No. 1 T. J. Routon, 813 ft., dry. Brazos Young Corp. No. 1 Robert Bullock, 4,891 ft., dry.

EAST TEXAS FIELD COMPLETIONS

(One-hour gages)

Gregg County—Kilgore Area

H. L. Carter No. 9 Clay, 3,537-40 ft., 20 bbl.

Smith County—Joiner Area

Hunt Oil Co. No. 21-B Fair, 3,689-92 ft., 60 bbl.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Kaufman County

J. F. McLaughlin No. 1 Wood-Nash, abandoned location.

Leon County

Humble Oil & Refining Co. No. 1 W. O. Harris, 5,850-5,997 ft., 53,000,000 cu. ft. of gas.

Red River County

Hampton-Osteen & Wooley No. 1 J. M. Roberts, abandoned location.

Forest City Basin Reports

(Continued from Page 95)

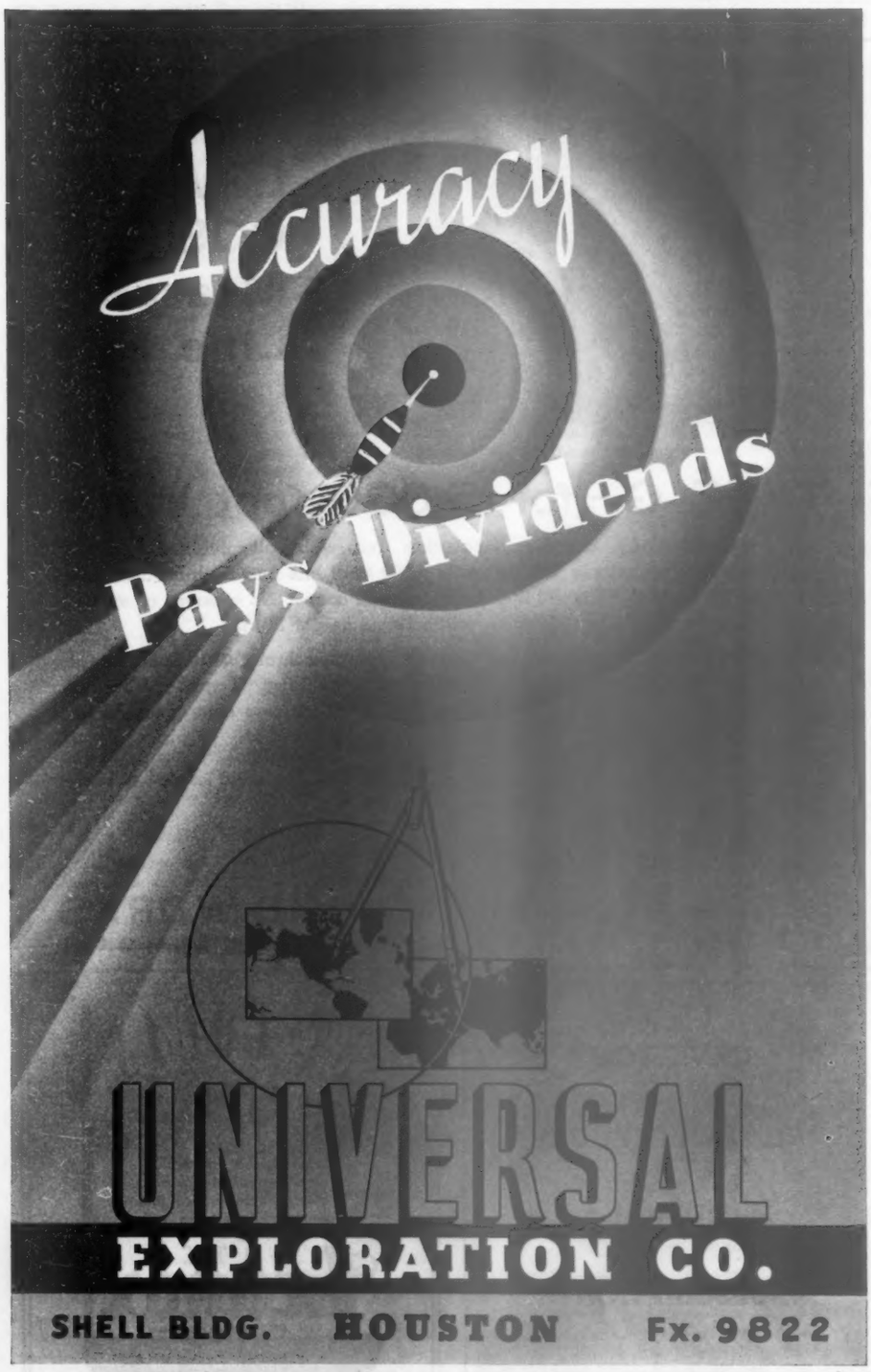
The 5-$\frac{1}{16}$-in. casing was being set at J. H. Everitt and others No. 1 Spring, SW SW SE Section 30-62-38w, following completion of a prolonged fishing job. It was bottomed at 2,440 ft. This was the first test to be started in the Missouri sector of the Forest City basin following the lease play that began last summer.

George W. Moore No. 1 McQuate, NE SW SW Section 11-57-31w, also has been pestered with caving hole in shale formations. It was bottomed at 750 ft. and casing was being run. It is in southern DeKalb County.

Engine trouble delayed operations at Bradley Bros., Burkett & Gillespie No. 1 Gee, NW NW SE Section 28-60-35w, near Savannah in Andrew County. It had been drilled to around 100 ft.

The third of three shallow structure tests drilled in Johnson County by Farrar & Hopp and others has been completed, and operators were reported preparing to drill a deep test on their block in that county.

Drilling operations are expected to start soon at several other locations that previously have been announced in scattered sectors of the Missouri sector of the basin. Some of these proposed tests have been delayed by difficulties in clearing titles, others by impassable roads and difficulty in getting drilling equipment to the locations. Several seismograph and geological crews are busy in the basin, representing both major companies and independent operators. A group of Illinois men were reported leasing and doing geological work in Carroll County, in the southern part of the Missouri basin, and were expected to announce a location for a test soon. Dorsey Hager, geologist, already has made location for a Carroll County test in Section 36-55-23w, south of Tina.



North Louisiana, Arkansas

By GEORGE WEBER

Shreveport Field Has Five New Wells; Important Tests

SHREVEPORT, La., May 20.—Wildcats and outpost tests attracted attention in Caddo and Bossier parishes, Louisiana, and in Panola County, Texas, in the week. In addition, three deep wildcats in the Smackover lime trend of South Arkansas and North Louisiana continued drilling, and important well completions featured field developments in Shreveport, Cotton Valley, and Waskom.

Considerable interest is being evinced in Harry Hanbury No. 1 Leonard, a wildcat drilling in Bossier Parish, about 6½ miles northeast of the Shreveport field. The wildcat this week drilled the following tops: Blossom, 2,105 ft.; Tokio, 2,550 ft.; Paluxy, 2,695 ft.; Glen Rose, 3,535 ft.; anhydrite, 3,975 ft.; massive anhydrite, 4,247 ft. The massive anhydrite is running about 110 ft. higher than in the wells in the Shreveport field. The test, drilling below 4,570 ft., is approaching the Pettit horizon, which produces in the Shreveport field.

To the northwest of the Shreveport field, another outpost attracted attention. J. P. Driscoll and others No. 1 Woolworth, SE cor. Section 26-20-15, and located in an outpost position to the field proper, was shut down at the close of this week at 5,570 ft., while repairs were being made. The test is very close to the Pettit horizon, and is expected to find saturation, in the next few feet, if there is any.

In the Shreveport field proper, five wells were completed during the week, one of which was successfully plugged back after water broke in. Drilling operations are falling off in the field, with the number of completions exceeding the number of new tests.

East Border Texas

The Panola County, Texas, wildcat, Turner & Smith No. 1 J. W. Bird, in the George Gillespie Survey, blew out for two days, making an unestimated amount of apparently dry gas from a sand below the massive anhydrite at 4,978 ft. The well was brought under control, and the operators are reported planning to core ahead in search of oil sand.

In the Waskom field of Harrison County, Arkansas-Louisiana Gas Co. No. 1 Jim Davis was completed as a gasser at 5,970-6,185 ft.

Cotton Valley

An important well completion at Cotton Valley was the Midstates Oil Corp. No. 1 Giddens, which made an initial production of 500 bbl. of oil from Bodcaw sand, on a ¼-in. choke, one of the best oil wells yet completed in the lower Marine formation of the major field. It is on the southeast flank of the field.

South Arkansas

The most advanced Smackover wildcat, Phillips Petroleum Co. No. 1 Askew unit, located northwest of Magnolia in C NE NW Section 4-17-21, Columbia County, Arkansas, is coring below 8,055 ft. with no saturation yet reported. The test topped the Buckner formation at 7,778 ft.

In the Magnolia field, one well was being completed late this week, after having been carried through the oil saturated zone of the porous Reynolds lime, and into the water horizon, to determine the amount of saturation in the field. The Shell Petroleum Corp. No. 2 Glasgow, located in the C SW NW Section 23-17-20, cored gas-distillate saturation at 7,472-7,507 ft., oil saturated section at 7,507-7,689 ft., and water to total depth at 7,708 ft. A string of 5½-in. casing has been set at 7,596 ft. and the well is being completed. The 182-ft. section of oil saturation in the Shell well illustrates the considerable reserve in the Magnolia field.

Stamps Well

In the Stamps area of Lafayette County, the second shallow oiler is shut in this week, awaiting storage facilities. The East Texas Refining Co. and Erwin & Leach No. 1 Bell is bottomed at 3,477 ft., with 5½-in. casing set at 3,368 ft.

Production by Pools

Estimated daily gross production of all companies for the week ending May 19:

NORTH LOUISIANA

	Bbl.
Bellevue	650
Caddo, light	4,650
Caddo, heavy	2,550
Converse	485
Cotton Valley, heavy	80
Cotton Valley, light	*13,970
Cross Lake	6,725
De Soto and Red River	1,110
Elm Grove	250
Haynesville	2,700
Holly	90
Homer	2,685
Lisbon	2,460
Pleasant Hill	90
Rodessa	27,205
Sarepta-Carterville	†530
Sligo	1,475
Sugar Creek	240
Urania	2,690
Zwolle	2,700
Total North Louisiana	73,335

SOUTH ARKANSAS

Atlanta	210
Buckner	1,635
Champagnolle	1,590
El Dorado	1,690
Lisbon	245
Magnolia	6,750
Miller County	340
Nevada	625
Rodessa	4,185
Schuler	18,060
Smackover, light	1,910
Smackover, heavy	14,705
Stamps	60
Stephens	525
Troy	960
Urbana	1,120
Village	595
Total South Arkansas	55,205

Texas side of Rodessa field 28,645 bbl. daily. *5,000 bbl. is distillate. †230 bbl. is distillate.

NORTH LOUISIANA COMPLETIONS

Caddo—Caddo Parish

Louisiana Natural Gas Co. No. 2 Stiles, SE cor. NE Section 28-21-16, pumping 40 bbl. per day, total depth 1,041 ft. J. M. Buckler No. 2 Barry, NW Section 11-20-16, pumping 15 bbl. per day, total depth 1,589 ft. Porter and others No. 1 Muslow, NE cor. NW SE Section 32-21-15, estimated 150 bbl. per day; set 6-in. casing at 1,365 ft.; acidized with 3,000 gal.; total depth 1,587 ft. Simplex Oil Co. No. 10-A Youree, SE SW Section 7-20-14, estimated 3,000,000 cu. ft. gas and heavy spray of salt water through 2½-in. tubing, set on packer, total depth 2,297 ft. Gerhig Co. No. 1 Caddo Levee Board, NW SE Section 36-21-16, 1,000,000 cu. ft. of gas and a light spray of oil, total depth 2,299 ft. T. W. Williams No. 2 Crystal fee, SW cor. SE SW Section 24-21-16, pumping 15 bbl. per day of oil and 100 bbl. of salt water, total depth 2,274 ft.

Shreveport—Caddo Parish

R. E. Allison No. 8 Ellerbe, 663 ft. N, 1,573 ft. E of SW cor. Section 26-18-14, 17 bbl. per hour through ¼-in. choke, casing pressure 750 lb., tubing pressure 300 lb., total depth 5,565 ft.; plugged back to 5,540 ft. to shut off salt water. R. E. Allison No. 10 Ellerbe, 3,014 ft. N, 661 ft. E of SW cor. Section 26-18-14, 17 bbl. per hour, ¼-in. choke; casing pressure 700 lb.; tubing pressure 275 lb.; 5½-in. casing set at 5,558 ft.; total depth 5,559 ft. Hurricane Petroleum Co. No. 1 De Soto, 1,942 ft. S, 656 ft. W of NE cor. Section 26-18-14, 481 bbl. per day, ¼-in. choke, 5½-in. casing set at 5,559 ft., total depth 5,565 ft., tubing pressure 750 lb.; casing pressure 800 lb. Lisbon-Iberia Oil Co. No. 1 Morgan and others, SE cor. NE SE Section 34-18-14, 16 bbl. per hour, ½-in. choke, casing pressure 1,300 lb., tubing pressure 1,200 lb., total depth 5,614 ft. Wardell Oil Co. No. 1 Clark & Hutchinson 600 ft. N, 375 ft. E of SW cor. NE SE Section 26-18-14, 30 bbl. per hour, ½-in. choke, total depth 5,557 ft., 5½-in. casing set at 5,550 ft.

Vivian—Caddo Parish

Batchelor, Adams & Birdwell No. 1 Van Horn, 1,650 ft. N, 313 ft. E of SW cor. Section 22-22-16, flowing by heads estimated 90 bbl. per day, 5½-in. casing set at 2,646 ft., total depth 2,656 ft. F. W. Martin Drilling Co. No. 1 Van Horn, 990 ft. E, 330 ft. S of NW cor SW Section 22-22-16, tested salt water at 2,792 ft., could not plug back, salt water and abandoned at 2,792 ft. Harry Shulman No. 1 J. W. Browning, 330 ft. S, 331 ft. W of NE cor. SE Section 21-22-16, total depth 2,794 ft., salt water and abandoned. Tippett Oil Co. No. 1 Browning, C E½ NE NE Section 28-22-16, drill stem test at 2,608-21 ft. recovered 300 ft. of oil and mud in 11 minutes, total depth 2,695 ft., abandoned. Tippett Oil Co. No. 1 Huckaby Estate, 330 ft. from SW cor. Section 26-22-16, tested salt water and was abandoned at 2,545 ft.

Homer—Claiborne Parish

Maritsky & Bibby No. 2 McClung, SE cor. SW Section 29-21-7, pumping 15 bbl. per day, 50 per cent salt water, top of sand 1,464 ft., total depth 1,469 ft.

Urania—La Salle Parish

Adams Oil & Gas Co. No. 1 Goodpine Oil Co., NE SW Section 1-10-2e, dry and abandoned at 2,700 ft. W. B. Jarvis No. 1-A Montague, NE cor. NW NW Section 11-9-1e, pumping 50 bbl. per day, total depth 1,502 ft.

Red River—Red River Parish

J. C. Prine No. 3 Haynes, SW cor. Section 20-13-10, pumping 5 bbl. per day, total depth 2,560 ft.

Zwolle—Sabine Parish

Hunter Co. No. 9 Bowman Hicks, NW SE Section 12-7-13, pumping 88 bbl. per day, top of sand at 2,577 ft., total depth 2,579 ft.

Cotton Valley—Webster Parish

Hunt Oil Co. No. 5 Bodcaw Stewart, NW cor. NE Section 33-21-10, 267 bbls. of distillate and 3,000,000 cu. ft. of gas daily through ¾-in. choke, tubing pressure 1,850 lb., tubing set on packer, total depth 8,347 ft. Midstates Oil Corp. No. 1 Giddens, 100 ft. NW of C SW SW Section 30-21-9, 500 bbl. per day, ¼-in. choke, tubing pressure 980 lb., casing pressure 1,000 lb., gas-oil ratio 700 to 1, total depth 8,628 ft.

ARKANSAS COMPLETIONS

Wildcat—Clark County

J. B. Zick, trustee, No. 1 A. P. Greene, 150 ft. S, 75 ft. W of NE cor. SE SE Section 21-8s-18w, dry and abandoned at 1,248 ft.

Troy—Nevada County

Berry Asphalt Co. No. 2 Groves Lumber & Timber Co., SW cor. SW NW Section 4-14-20, pumping 30 bbl. per day, total depth 1,213 ft.

Schuler—Union County

Phillips Petroleum Co. No. 4 Brian, NE cor. NE SE Section 13-18-18, 488 bbl. per day, 20/64-in. choke, total depth 7,760 ft., 7-in. casing set at 7,736 ft. Phillips Petroleum Co. No. 10 Sewell, C S½ Lot 4, SW Section 7-18-17, 125 bbl. per day, 12/64-in. choke, tubing pressure 1,250 lb., casing pressure 875 lb., set 7-in. casing at

7,752 ft., perforated at 7,659-64 ft., total depth 7,785 ft.

EAST TEXAS BORDER COMPLETIONS

Waskom—Harrison County

Arkansas Louisiana Gas Co. No. 1 Jim Davis, 1,043 ft. S, 876 ft. W of NE cor. of lease, James Adams Survey, 5,040,000 cu. ft. of gas, total depth 6,200 ft., perforated casing at 5,970-6,000 ft. and 6,150-85 ft., treated with 4,000 gal. of acid; closed-in casing pressure 2,400 lb.

Wildcat—Marion County

Exploration Co., Inc., No. 1 Susie Chatten, I. N. Jones Survey, dry and abandoned at 2,682 ft. Jim Parsons and others No. 1 Ney, 236.6-acre tract, W. H. Barton Survey, dry and abandoned at 2,695 ft.

MISSISSIPPI COMPLETIONS

Wildcat—Madison County

Union Producing Co. No. 1 Anderson, 3,960 ft. W of NE cor. Section 12-8n-1w, dry and abandoned at 6,200 ft., tested salt water at 4,414-25 ft.

POZA RICA FIELD

(Continued from Page 29)

tion for February 1938, was 21,451 bbl. whereas the average daily production for February 1939, was only 8,631 bbl. There has been no drilling activity in this district and none is contemplated.

There has been almost no activity for the past year in the heavy oil district to the north of Tampico. This district, generally called the Panuco-Ebano area, has a producing area of 105,000 acres. The first wells were drilled around 1900 by Doheny and the whole area to the end of 1937 produced 733,971,333 bbl. The crude from this area has a gravity varying between 10° and 12° A.P.I. and is an asphaltic base crude. As there has been almost no demand for this crude during the past year, since the market is all for light fuel oil and gasoline, production has been kept very low. In February 1938, the companies were producing a daily average of 23,221 bbl., while in February 1939, Petroleos Mexicanos produced a daily average of 6,060 bbl.

However, in spite of the fact that there is no demand for the oil and they cannot produce what they already have, three wells have been drilled (one dry hole and shows of oil in the other two) and a fourth is being drilled. Petroleos Mexicanos is not drilling for oil in this district. Drilling is being done to train drilling crews and to keep the workers busy. One American toolpusher is helping supervise the men. They plan to drill six more wells in this district this year.

It is in the heavy oil district and the Golden Lane district that all the independent production which was not expropriated lies. There are 47 companies (13 of which are Mexican owned), which are operating now in Mexico. Chief of these are Mexican Gulf, New England, International, Transcontinental, and Globe Petroleum. The production of all these companies combined was 13,328 bbl. daily average for January 1938. They are the ones who have really suffered by the expropriation for they have not been able to sell a single barrel of oil since March 18, 1938, as the major companies of the United States who formerly bought it will not buy it now. With the exception of Mexican Gulf and one or two others they are independents with no big company capital with which to withstand the loss. They are still producing on an extremely small scale—daily average production of all these companies for January 1939, was 3,770 bbl.—and storing the oil waiting to see what will happen. Petroleos Mexicanos helps them out from time to time by storing their oil when it has extra storage space.

Aside from the independents, royalty owners are the only others who have suffered financially from the expropriation. Petroleos Mexicanos has not been able to pay any royalties to date, but credit in oil has been kept for them. The royalty owners are now combining to form a company to export this crude oil which Petroleos Mexicanos will turn over to them when they are ready. However, the royalty owners face a discouraging picture as they will not be allowed to market it domestically, must find their own buyers in the international market and will not be allowed to sell it for a price under that of Petroleos Mexicanos

From March 1938, to March 1939, only $500,000 has been spent for oil field equipment, most of which has been purchased in the United States. Since there has been so comparatively little development work there has not been much need for new equipment and there has been relatively little need for maintenance equipment. What need there has been, has been supplied by their own machine shops. However, most of the properties, with the exception of Poza Rica and the Isthmus fields, both ex-Aguila properties, are in an extremely run-down condition. They were in bad condition when they were taken over as the companies had made only absolutely necessary repairs for the past few years and no money has been spent on them during the past year.

The production department has a greater shortage of technical men than the refining department. With the exception of Engineer de la Garza, production manager, there are only four petroleum engineers in the organization—two in the Isthmus, one in Poza Rica and one in the head offices in Mexico City. The other engineers in charge of the various districts and supervising work are construction engineers who were with the former companies. There are only two geologists at present with the organization, one in Tampico and one in Mexico City. Two more are being engaged. However, there is not such need for geologists at present as the only drilling which is being done is in known areas where the petroleum engineers know the formations and what to expect. They have been able to handle the wells competently, checking samples with the two geologists. There are nine American drillers in the organization supervising the Mexican drillers and teaching them. Altogether in the entire republic they have 10 drilling crews that can drill competently. With the men they now have they are able to get along with only one seismograph crew, headed by a Mexican former assistant to the head of an Aguila seismograph crew.

Petroleos Mexicanos will not be able to carry on exploration and development work in new areas to any great extent because of the large capital necessary, which it does not have. Opening new fields in Mexico involves more problems and more money than the average oil man in the United States would think. For example, the prospective oil fields in the State of Tabasco in the Isthmus are in territory that is a maze of little streams and rivers and is covered by dense jungle and thick forests. There are no roads or railroads. During the rainy season it is almost impossible to travel at all. After the great expense of exploration work of all types is finished and a wildcat has been drilled and oil has been found, the trouble is just beginning. Pipe lines must be built, roads and narrow-gage railroads, equipment must be hauled over great distances, camps must be established that are the equivalent of towns. These are only a few of the difficulties of opening a new field in Mexico which give an idea of the expenses that are involved. This is the story, too, of every oil field that has been opened in Mexico. Mexico was once in the top ranks of world producers of petroleum and, although it is now producing only 2.4 per cent of world production, the indications are that its potentialities have only just been tapped. There are possible big fields not only in the Isthmus but in the northeast, the west and central Mexico.

California Fields

(Continued from Page 99)

ft. is believed to be the deepest ever drilled in California with a butane outfit. In the Rio Bravo field, Superior Oil Co. is drilling out cement in No. 1 Moodie following the landing of a 7⅝-in. water string at 11,516 ft. and preparations are under way to make an early test. This well which is down 11,559 ft. and which topped the pay at 11,529 ft. is about 148 ft. lower structurally than Superior Oil Co. No. 1 Anderson. This company has just staked location for No. 1 Fink in Section 27-28-25 a short distance west of No. 1 Moodie. Union Oil Co. has hit the pay at 11,267 ft. in No. 8-34 Kern County Land in Section 34-28-25 and the company has built derrick for No. 9-34 Kern County Land in the same section. In the Shafter district of Kern County, Union is preparing to make a production test of No. 1-36 Kern County Land in Section 36-27-24 with bottom of the hole at 12,985 ft. and a string of 7-in. casing set as a water string at 12,787 ft.

In the Delano gas field, Standard Oil Co.'s crews have succeeded in bringing No. 2 T.G.&T. under control following a gas blowout of several days duration and preparations are now under way to finish it as a commercial gas well. This well blew out from a depth of 2,430 ft. with a 7-in. water string set at 2,399 ft. while the crew was coming out of the hole and before it can be finished the string of drill pipe that was dropped to the bottom of the hole must be recovered.

Los Angeles Basin

In the Rosecrans field of Los Angeles County, Universal Consolidated Oil Co. succeeded in finishing No. 15 Trust flowing 610 bbls. of 32.6-gravity oil cutting 3 per cent and 500,000 cu. ft. of natural gas per day from the O'Dea zone with bottom of the hole at 7,817 ft. This well which was finished with 457 ft. of 6⅝-in. liner hung at 7,813 ft. and carrying perforations at 7,361-7,499 ft. and at 7,590-7,813 ft. was completed flowing through a 48/64-in. bean and showed a tubing pressure of 350 lb. and a casing pressure of 750 lb. In the Dominguez field, Union Oil Co. completed No. 11 Carson flowing 145 bbl. of 31.5-gravity oil cutting 12 per cent through a 36/64-in. bean from the lower zone at 8,500 ft. and No. 67 Callender flowing 580 bbl. of clean 31.6-gravity oil and 600,000 cu. ft. of natural gas per day through a 32/64-in. bean from a depth of 7,235 ft.

Eastern Kentucky Fields

(Continued from Page 96)

on Walker Creek in the Hell Creek district of Lee County.

The Evans Oil & Gas Co. No. 4 on the George A. Rogers land on South Fork in the South Fork district of Powell County was dry and abandoned at 800 ft.

In the Hell Creek district of Lee County J. P. Palmer is down 400 ft. in No. 1 Thomas Shackleford and others on Walker's Creek, near Fincastle. In the same district the Bear Track Oil Co. deep test was drilling at 2,800 ft. This well is on the firm's land on Kentucky River, west of Beattyville. Dr. Lehman and others are cleaning out an old well on Sarah L. Bush land near Torrent on Walker's Creek.

In the Burning Fork district of Magoffin County Rough River Corp. is making preparations to resume work with tools stuck in the hole at 650 ft.

In Knott County the Kentucky-West Virginia Gas Co. is drilling at 2,033 ft, in Big lime, in No. 579 Sherwood Osborne, on Little Doty Branch, and is rigging up No. 5040 W. R. Hall on Four-Mile Branch of Jones Fork. The same company is fishing for bit in No. 580 H. H. Smith.

The Inland Gas Corp. has reached the 2,378-ft. level in Maxon sand in No. 208 Lonnie Amburgy, on Carr's Fork, and has location for No. 209 Joseph Pigman on Troublesome Creek. The same firm is down 132 ft., in sand, in No. 210 E. H. Pigman, on the Right Fork of Troublesome Creek.

In Floyd County the Kentucky-West Virginia Gas Co. is cleaning out No. 5250 William Crider on Johns Creek. The same firm is moving to location of No. 5253 George McKinney, on Deadening Fork of Toler Creek and is also moving to location of No. 5254 on the George McKinney land, on Branham Creek of Mud Creek.

In Martin County the Kentucky-West Virginia Gas Co. is down 1,525 ft. in Injun in No. 5252 Clery Taylor, on Linbark Fork of Coldwater Fork, and is moving to location of No. 5255 M. W. Crum, on Ramey Branch of Rockhouse Fork.

In Knox County Schmidt Oil Corp. has reached 3,832 ft. in No. 1 G. W. Hammonds on Little Richmond Creek. The company expects to go through Trenton at 3,900 ft. There was a show of oil at 3,082 ft.

Summary of Operations in All Fields, April

SUMMARY OF ALL FIELDS

Rigs and Wells Drilling

	Comp.	Prod.	Dry	Gas
Eastern fields	299	367	21	48
Lima	2	2	1	0
Central Ohio	70	86	24	37
Indiana	18	165	10	4
Western Kentucky	30	2,078	15	0
Eastern Kentucky	13	110	2	5
Michigan	121	31,134	58	6
Illinois	280	46,914	58	0
Kansas	79	31,309	21	3
Oklahoma	142	27,003	43	11
N. Central Texas	190	53,416	79	1
West Texas	148	114,701	11	0
Texas Panhandle	31	6,449	3	9
East Texas	19	794	2	0
E. Central Texas	20	1,537	12	1
E. Texas Border	2	240	1	0
Gulf Coast, Texas	109	27,792	19	5
Southwest Texas	189	20,745	49	4
Arkansas	17	6,760	5	0
North Louisiana	57	10,175	12	6
Gulf Coast, La.	43	7,058	12	0
Montana	16	1,314	4	1
Wyoming	5	11,860	3	0
New Mexico	55	16,669	5	3
Nebraska	1	0	1	0
Total April	1,956	418,678	471	144
Total March	1,769	383,771	439	134
Difference	187	34,907	32	10

Wells Completed

	Rigs	Drlg.	Ttl.
Eastern fields	66	247	313
Lima	0	10	10
Central Ohio	37	95	132
Indiana	17	65	82
Western Kentucky	1	65	66
Eastern Kentucky	7	29	36
Michigan	18	135	153
Illinois	54	354	408
Kansas	40	164	204
Oklahoma	41	314	355
North Central Texas	87	254	341
West Texas	68	273	341
Texas Panhandle	10	78	88
East Texas	4	13	17
East Central Texas	13	37	50
East Texas Border	6	6	12
Gulf Coast, Texas	23	108	131
Southwest Texas	30	172	202
Arkansas	24	21	45
North Louisiana	24	43	67
Gulf Coast, Louisiana	25	102	127
Mississippi	2	5	7
Montana	4	44	48
Wyoming	5	72	77
New Mexico	11	138	149
Florida	0	1	1
Colorado	2	27	29
Utah	1	3	4
Georgia	0	2	2
Missouri	4	9	13
Nebraska	0	2	2
Total April	624	2,888	3,512
Total March	597	2,818	3,415
Difference	27	70	97

OKLAHOMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Atoka	0	0	0	0	0	1
Beckham	1	0	1	0	0	1
Caddo	4	2,858	0	0	3	11
Carter	2	19	0	0	0	8
Choctaw	0	0	0	0	0	1
Cleveland	1	0	1	0	0	2
Coal	1	1,249	0	0	1	0
Comanche	2	4	1	0	1	5
Creek	21	2,104	6	1	3	36
Ellis	0	0	0	0	0	1
Garfield	3	75	2	0	1	4
Garvin	2	0	2	0	1	1
Grady	1	0	1	0	0	5
Grant	0	0	0	0	1	1
Harper	0	0	0	0	0	1
Hughes	1	0	1	0	0	4
Jackson	2	47	1	0	1	9
Jefferson	0	0	0	0	0	2
Kay	2	0	2	0	0	4
Kingfisher	0	0	0	0	0	2
Kiowa	0	0	0	0	1	5
Lincoln	12	1,702	1	0	6	5
Logan	0	0	0	0	0	7
Love	0	0	0	0	0	1
Marshall	0	0	0	0	0	2
McIntosh	0	0	0	0	0	1
Murray	1	0	1	0	0	0
Muskogee	3	5	2	0	0	8
Noble	2	1,759	0	0	0	3
Okfuskee	2	74	1	0	0	9
Oklahoma	0	0	0	0	0	6
Okmulgee	8	20	3	3	1	22
Osage	8	87	0	1	2	10
Pawnee	4	740	2	0	0	9
Payne	4	7,840	0	0	3	6
Pittsburgh	0	0	0	0	0	1
Pontotoc	10	2,931	1	1	1	15
Pottawatomie	18	4,037	3	0	7	46
Sequoyah	0	0	0	0	0	1
Seminole	18	1,424	6	3	6	25
Stephens	3	20	1	1	1	11
Tillman	2	0	2	0	0	3
Tulsa	4	8	2	1	0	11
Wagoner	0	8	0	1	0	6
Washita	0	0	0	0	1	2
Total Apr.	142	27,003	43	11	41	314
Total Mar.	167	23,121	52	9	38	284
Difference	25	3,882	9	2	3	30

KANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Barber	2	0	1	1	0	2
Barton	19	9,446	8	0	2	20
Butler	6	235	1	0	2	12
Chase	0	0	0	0	0	1
Coffey	0	0	0	0	0	1
Cowley	5	4,074	1	0	6	14
Dickinson	0	0	0	0	0	1
Ellis	1	1,167	0	0	5	10
Ellsworth	4	1,772	0	0	1	2
Finney	0	0	0	0	1	0
Geary	0	0	0	0	0	1
Graham	0	0	0	0	0	1
Grant	0	0	0	0	0	2
Greenwood	2	28	0	0	1	10
Harvey	1	438	0	0	0	0
Johnson	0	0	0	0	0	2
Kingman	2	656	0	0	0	1
Kiowa	0	0	0	0	0	1
Leavenworth	0	0	0	0	0	1
Marion	1	5	0	0	0	2
McPherson	4	795	1	0	4	5
Meade	0	0	0	0	0	1
Ness	0	0	0	0	1	1
Norton	0	0	0	0	0	1
Osage	0	0	0	0	0	1
Ottawa	0	0	0	0	0	1
Phillips	0	0	0	0	0	1
Pratt	1	0	0	1	0	1
Reno	4	1,193	1	0	0	6
Rice	8	2,924	2	1	8	24
Rooks	1	155	0	0	0	1
Russell	9	5,697	2	0	4	22
Rush	1	280	0	0	0	0
Saline	0	0	0	0	0	1
Sedgwick	2	658	1	0	2	3
Shawnee	0	0	0	0	0	1
Smith	0	0	0	0	1	0
Stafford	5	1,686	3	0	1	5
Sumner	1	100	0	0	1	2
Woodson	0	0	0	0	0	3
Ttl. Apr.	79	31,309	21	3	40	164
Ttl. Mar.	86	27,423	21	5	34	153
Difference	7	3,886	0	2	6	11

MISSOURI

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrew	0	0	0	0	1	0
Clay	0	0	0	0	0	2
Clinton	0	0	0	0	1	0
De Kalb	0	0	0	0	0	1
Hickory	0	0	0	0	0	1
Holt	0	0	0	0	1	1
Johnson	0	0	0	0	0	3
Shelby	0	0	0	0	0	1
Sullivan	0	0	0	0	1	0
Total. Apr.	0	0	0	0	4	9
Total Mar.	0	0	0	0	2	6
Difference	0	0	0	0	2	3

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Dlg.	Ttl.
Agua Dulce	2	0	0	2	0	1
Alice (South)	5	182	2	0	2	4
Alta Mesa	0	0	0	0	0	1
Benavides	2	159	0	0	0	2
Blucher	0	0	0	0	0	1
Bonnieview	0	0	0	0	0	1
Branyon	4	1	384	0	0	0	1
Byersville	1	0	1	0	0	0
Calliham	0	0	0	0	1	0
Cedro Hill	3	255	0	0	1	1
Chacon Lake	2	1	1	0	0	0
Clara Driscoll	5	595	0	0	0	4
Clark	1	5	0	0	0	1
Colorado	0	0	0	0	1	0
Coffey	1	0	1	0	0	1
Dale	1	0	1	0	0	0
Darst Creek	8	642	1	0	1	4
Driscoll	0	0	0	0	0	1
Dunlay	0	0	0	0	0	3
Eagle Hill	0	0	0	0	0	1
Eckert	1	0	1	0	0	0
E. Premont	1	216	0	0	0	1
Escobas	0	0	0	0	0	1
East White Point	13	1,903	0	0	4	10
Ezzell	15	3,256	1	0	0	2
Fitzsimmons	3	375	0	0	0	1
Fox	0	0	0	0	1	0
Heyser	3	124	0	1	0	2
Hoffman	9	936	1	0	1	2
Kelsey	2	224	0	0	0	2
Killam	2	40	1	0	0	0
Kimbro	0	0	0	0	0	1
Keeran	0	0	0	0	0	1
La Sal Vieja	0	0	0	0	0	1
Lockhart	0	0	0	0	0	1
La Rosa	5	716	0	0	0	5
Longhorn	2	278	0	0	0	2
Lomo Novio	1	0	1	0	0	0
Luby	3	350	0	0	1	2
Luling	2	125	0	0	0	2
McCampbell	19	2,329	0	0	4	14
McFaddin	4	480	1	0	0	3
Mellon Creek	3	719	0	1	0	1
Mirando Valley	3	250	1	0	1	2
North Agua Dulce	0	0	0	0	0	1
North Pettus	0	0	0	0	1	0
North McFaddin	0	0	0	0	0	1
Oakville	2	50	1	0	0	1
Palanaga	0	0	0	0	0	1
Piedra De Lumbre	6	1,094	0	0	1	3
Plymouth	0	0	0	0	0	1
Ramirena	1	0	1	0	0	0
Rancho Solo	1	0	1	0	0	1
Refugio	2	362	0	0	0	2
Richard King	1	38	0	0	0	1
Riddle	2	0	2	0	0	1
Riverside	2	57	1	0	0	1
Salt Flat	1	35	0	0	2	4
Samfordyce	2	183	0	0	0	3
San Jose	0	0	0	0	0	1
Saxet	3	337	0	0	0	4
Slick	0	0	0	0	0	1
South Aldred	1	246	0	0	1	1
South Clara Driscoll	1	147	0	0	0	3
South Ricaby	1	0	1	0	0	1
Somerset	1	3	0	0	0	1
Southland	1	145	0	0	0	0
Stratton	0	0	0	0	0	1
Sun	2	208	1	0	0	2
Tesoro	1	118	0	0	0	2
Tomoconnor	5	2,976	0	0	1	2
Tulsita	1	18	0	0	0	0
Von Ormy	2	4	1	0	0	1
Weser	0	0	0	0	0	1
West Saxet	1	180	0	0	0	0
White Creek	0	0	0	0	0	3
Miscellaneous	26	0	26	0	6	44
Ttl. Apr.	189	20,745	49	4	30	172
Ttl. Mar.	215	20,111	65	8	33	186
Difference	26	634	16	4	3	14

TEXAS PANHANDLE

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Carson	5	1,199	1	1	1	4
Collingsworth	0	0	0	0	0	1
Deaf Smith	0	0	0	0	0	1
Donley	1	0	1	0	0	0
Dickens	0	0	0	0	0	3
Floyd	0	0	0	0	0	1
Gray	10	3,215	0	1	5	22
Hutchinson	9	1,973	0	3	3	29
Lipscomb	0	0	0	0	0	1
Moore	5	62	0	4	0	5
Motley	0	0	0	0	0	1
Potter	0	0	0	0	1	2
Roberts	1	0	1	0	0	1
Wheeler	0	0	0	0	0	7
Ttl. Apr.	31	6,449	3	9	10	78
Ttl. Mar.	31	6,964	6	3	25	71
Difference	0	515	3	6	15	7

WEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrews	9	12,775	1	0	2	7
Brewster	0	0	0	0	0	2
Cochran	0	0	0	0	0	2
Crane	8	6,394	1	0	0	23
Crockett	3	444	0	0	0	4
Crosby	0	0	0	0	0	1
Culberson	1	0	1	0	0	2
Concho	0	0	0	0	0	3
Dawson	0	0	0	0	0	2
Ector	42	49,012	0	0	10	50
El Paso	0	0	0	0	0	1
Gaines	0	0	0	0	1	7
Glasscock	1	0	1	0	0	2
Hockley	1	417	0	0	2	7
Howard	8	3,091	0	0	3	18
Hudspeth	0	0	0	0	0	2
Kent	1	0	1	0	0	1
Loving	0	0	0	0	1	1
Lynn	0	0	0	0	0	1
McCulloch	0	0	0	0	0	1
Nolan	0	0	0	0	0	1
Pecos	15	3,756	2	0	15	38
Presidio	0	0	0	0	1	2
Reeves	0	0	0	0	0	2
Runnels	0	0	0	0	1	2
Schleicher	0	0	0	0	0	4
Scurry	1	154	0	0	2	5
Stonewall	0	0	0	0	1	2
Sutton	0	0	0	0	0	2
Terrell	0	0	0	0	0	1
Tom Green	1	0	1	0	0	5
Upton	10	3,997	1	0	0	11
Ward	17	5,136	1	0	11	24
Winkler	9	6,764	0	0	1	11
Yoakum	21	22,761	1	0	17	26
Ttl. Apr.	148	114,701	11	0	68	273
Ttl. Mar.	117	112,655	11	0	51	293
Difference	31	2,046	0	0	17	20

EASTERN TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anderson	1	0	1	0	0	6
Angelina	0	0	0	0	0	2
Cherokee	1	0	1	0	0	0
Dallas	0	0	0	0	0	1
Falls	0	0	0	0	0	1
Franklin	1	307	0	0	0	2
Freestone	1	6	0	1	0	1
Grayson	1	0	1	0	3	4
Gregg	10	434	0	0	4	7
Henderson	2	184	0	0	3	4
Hill	0	0	0	0	0	1
Houston	1	143	0	0	2	3
Kaufman	1	0	1	0	1	2
Lamar	1	0	1	0	0	0
Leon	1	105	0	0	2	1
Limestone	2	0	2	0	0	1
McLennan	3	0	3	0	0	1
Nacogdoches	1	0	1	0	0	1
Navarro	0	0	0	0	0	2
Rains	0	0	0	0	0	1
Red River	1	0	1	0	1	1
Robertson	0	0	0	0	1	0
Rusk	7	360	0	0	0	3
Smith	0	0	0	0	0	2
Titus	2	798	0	0	0	1
Upshur	1	0	1	0	0	1
Van Zandt	0	0	0	0	0	1
Wood	1	0	1	0	0	0
Ttl. Apr.	39	2,331	14	1	17	50
Ttl. Mar.	33	1,295	11	1	7	55
Difference	6	1,036	3	0	10	5

CENTRAL AND NORTH TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Archer	24	3,424	15	0	7	20
Baylor	1	0	1	0	0	2
Brown	3	12	1	0	0	15
Callahan	8	0	8	0	1	10
Clay	9	852	2	0	8	9
Coleman	3	0	3	0	0	6
Comanche	4	85	2	0	0	2
Cooke	9	1,405	6	0	7	12
Coryell	0	0	0	0	0	1
Denton	0	0	0	0	1	2
Erath	0	0	0	0	0	1
Eastland	3	16	2	0	0	9
Fisher	1	0	1	0	0	1
Foard	0	0	0	0	0	1
Hamilton	0	0	0	0	0	2
Haskell	0	0	0	0	1	2
Hood	0	0	0	0	0	1
Jack	11	992	6	0	7	8
Johnson	0	0	0	0	0	1
Jones	20	13,609	4	0	15	36
Montague	3	164	1	0	3	5
Palo Pinto	4	13	2	1	2	5
Parker	0	0	0	0	0	1
Shackelford	20	3,039	12	0	6	13
Stephens	2	291	0	0	2	4
Tarrant	0	0	0	0	1	1
Taylor	0	0	0	0	2	1
Throckmorton	0	0	0	0	1	2
Wichita	36	23,395	4	0	13	44
Wilbarger	6	1,645	1	0	1	9
Wise	0	0	0	0	0	5
Young	23	4,474	8	0	9	23
Ttl. Apr.	190	53,416	70	1	87	254
Ttl. Mar.	167	34,706	75	6	93	215
Difference	23	18,710	4	5	6	39

TEXAS GULF COAST

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ace	1	329	0	0	0	0
Amelia	0	0	0	0	0	2
Anahuac	2	632	0	1	0	2
Batson	2	0	2	0	0	1
Bay City	1	238	0	0	0	1
Barbers Hill	3	621	0	1	0	1
Bammel	1	0	1	0	0	1
Big Creek	0	0	0	0	0	1
Blue Ridge	1	425	0	0	0	0
Boling	1	452	0	0	0	1
Caplen	0	0	0	0	0	1
Cedar Point	0	0	0	0	0	1
Clear Lake	0	0	0	0	0	1
Clam Lake	1	118	0	0	0	1
Clinton	0	0	0	0	0	1
Cordelle	1	274	0	0	0	2
Damon Mound	0	0	0	0	0	2
Danbury	1	10	0	0	0	3
Dickinson	1	768	0	0	3	5
Eureka	2	1,223	0	0	1	1
Esperson	0	0	0	0	0	1
Fannett	0	0	0	0	0	1
Fairbanks	16	1,969	3	0	2	7
Francitas	0	0	0	0	0	3
Friendswood	9	4,534	0	0	1	5
Greens Lake	0	0	0	0	0	1
Hardin	4	1,183	0	1	1	4
Hankamer	0	0	0	0	0	2
Hastings	7	3,634	1	0	0	3
High Island	0	0	0	0	0	1
Hull	1	303	0	0	1	0
Humble	0	0	0	0	0	1
Katy	0	0	0	0	0	1
League City	4	1,841	0	0	0	3
Lockridge	1	215	0	0	0	0
Louise	2	600	0	0	0	1
Lovells Lake	3	247	1	0	0	3
Labelle	0	0	0	0	0	1
Magnet	2	428	0	0	0	2
Mykawa	1	0	1	0	0	0
Manvel	0	0	0	0	0	1
Markham	0	0	0	0	0	1
Northwest Conroe	1	0	1	0	0	0
Old Ocean	1	350	0	0	1	4
Orange	2	223	0	0	1	2
Pierce Junction	0	0	0	0	0	2
Port Neches	0	0	0	0	0	2
Satsuma	2	0	2	0	1	1
Seabreeze	1	26	0	0	1	1
Segno	2	1,034	0	0	0	3
Silsbee	1	336	0	0	1	1
Spindletop	1	284	0	0	0	0
Spurger	1	457	0	0	0	1
Thompson	5	1,761	0	0	1	2
Tomball	2	240	0	1	1	1
Turtle Bay	2	451	0	0	1	0
Van Vleck	1	382	0	0	1	1

West Ranch	0	0	0	0	0	1
W. Columbia	5	1,486	0	0	0	1
Withers	7	718	0	1	1	3
Miscellaneous	7	0	7	0	4	12
Ttl. Apr.	109	27,792	19	5	23	108
Ttl. Mar.	110	25,355	16	3	26	124
Difference	1	2,437	3	2	3	16

COASTAL LOUISIANA

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Abbeville	0	0	0	0	0	1
Bayou Blue	0	0	0	0	1	0
Bancroft	2	630	0	0	0	2
Bateman Lake	0	0	0	0	0	2
Bay St. Elaine	1	98	0	0	0	1
Black Bayou	0	0	0	0	0	1
Caillou Island	1	600	0	0	0	1
Chalkley	1	24	0	0	0	2
Creole	0	0	0	0	0	1
Chacahoula	0	0	0	0	0	2
Charenton	1	144	0	0	0	2
Cheneyville	0	0	0	0	0	2
Choctaw	1	0	1	0	0	0
Convent	0	0	0	0	0	1
Darrow	0	0	0	0	0	1
Dog Lake	0	0	0	0	0	1
De Large	0	0	0	0	0	1
East Baton Rouge	1	288	0	0	1	4
Eola	1	796	0	0	1	6
Fausse Point	0	0	0	0	0	1
Garden Island	0	0	0	0	0	1
Gibson	0	0	0	0	0	1
Gillis	0	0	0	0	0	1
Golden Meadows	0	0	0	0	1	2
Grand Bay	0	0	0	0	0	2
Hackberry	1	50	0	0	2	5
Jeanerette	1	340	0	0	0	0
Jefferson Island	0	0	0	0	0	2
Jennings	0	0	0	0	0	6
Lake Barre	0	0	0	0	0	1
Lake Long	0	0	0	0	0	1
Lake Mongoulois	0	0	0	0	0	1
Lake Pelto	1	0	1	0	0	1
Leesville	1	0	1	0	0	0
Lirette	1	3	0	0	0	1
Lockport	1	0	1	0	0	0
N. Crowley	0	0	0	0	0	1
N. Tepetate	2	310	0	0	2	0
New Iberia	6	920	0	0	2	3
Port Barre	1	400	0	0	1	0
Potash	1	168	0	0	1	0
Quarantine Bay	2	834	0	0	0	3
Raceland	0	0	0	0	0	2
Roanoke	1	0	1	0	1	0
S. Houma	0	0	0	0	0	1
Sorrento	0	0	0	0	1	0
S. Roanoke	1	192	0	0	1	0
Sulphur	2	9	1	0	0	3
Timbalier Bay	1	80	0	0	0	0
Valentine	2	256	1	0	1	1
Venice	1	246	0	0	1	0
Villa Platte	2	625	0	0	0	5
Vinton	1	45	0	0	0	0
Woodlawn	0	0	0	0	0	3
Miscellaneous	5	0	5	0	8	23
Ttl. Apr.	43	7,058	12	0	25	102
Ttl. Mar.	36	7,482	14	1	18	103
Difference	7	424	2	1	7	1

EAST TEXAS BORDER

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Harrison	0	0	0	0	1	2
Marion-Rodessa	1	240	0	0	0	1
Marion other	1	0	1	0	4	1
Panola	0	0	0	0	0	2
Shelby	0	0	0	0	1	0
Ttl. Apr.	2	240	1	0	6	6
Ttl. Mar.	3	1,340	0	0	6	6
Difference	1	1,100	1	0	0	0

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Calhoun	0	0	0	0	1	0
Clark	0	0	0	0	1	0
Clay	0	0	0	0	1	0
Columbia	6	2,385	1	0	5	11
Hot Springs	0	0	0	0	1	0
Fafayette	2	510	0	0	0	1
Little River	0	0	0	0	2	0
Lonoke	0	0	0	0	3	1
Miller-Rodessa	0	0	0	0	1	1
Nevada	0	0	0	0	1	1
Ouachita	0	0	0	0	2	0
Saline	0	0	0	0	1	0
Union	9	3,865	4	0	4	6
White	0	0	0	0	1	0
Ttl. Apr.	17	6,760	5	0	24	21
Ttl. Mar.	14	5,970	4	0	10	28
Difference	3	790	1	0	14	7

NORTH LOUISIANA

Summary of Field Operations

Parish—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.
Bienville	0	0	0	0	0	3
Bossier	1	0	0	1	1	0
Caddo-Rodessa	2	255	0	0	0	0
Caddo other	36	6,955	9	0	9	20
Caldwell	0	0	0	0	1	0
Claiborne	2	30	0	0	1	0
De Soto	1	10	0	0	2	2
La Salle	1	10	0	0	2	3
Morehouse	0	0	0	0	1	0
Natchitoches	0	0	0	0	0	1
Ouachita	2	0	0	2	0	0
Red River	1	10	0	0	1	0
Sabine	5	175	3	0	3	6
Tensas	0	0	0	0	1	0
Union	1	0	0	1	0	1
Webster	5	2,730	0	2	2	7
Ttl. Apr.	57	10,175	12	6	24	43
Ttl. Mar.	41	9,400	15	5	21	44
Difference	16	775	3	1	3	1

*Gas production: Bossier Parish, 25,000,000 cu. ft.; Ouachita Parish, 2,000,000 cu. ft.; Union Parish, 2,000,000 cu. ft.; Webster Parish, 6,300,000 cu. ft.

MISSISSIPPI

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Calhoun	0	0	0	0	1	0
Clark	0	0	0	0	0	1
Hinds	0	0	0	0	1	1
Lowndes	0	0	0	0	0	1
Madison	0	0	0	0	0	1
Simpson	0	0	0	0	0	1
Ttl. Apr.	0	0	0	0	2	5
Ttl. Mar.	2	0	2	0	3	3
Difference	2	0	2	0	1	2

GEORGIA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Clinch	0	0	0	0	0	1
Pierce	0	0	0	0	0	1
Ttl. Apr.	0	0	0	0	0	2
Ttl. Mar.	0	0	0	0	0	0
Difference	0	0	0	0	0	2

FLORIDA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Nassau	0	0	0	0	0	1
Ttl. Apr.	0	0	0	0	0	1
Ttl. Mar.	1	0	1	0	1	0
Difference	1	0	1	0	1	1

ROCKY MOUNTAIN AREA

New Mexico

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bernalillo	0	0	0	0	0	2
McKinley	0	0	0	0	0	2
San Juan	1	34	0	0	0	11
San Miguel	0	0	0	0	1	2
Socorro	0	0	0	0	0	1
Torrance	0	0	0	0	0	2
Valencia	0	0	0	0	0	2
Lea	47	16,490	3	2	6	73
Eddy	7	145	2	1	4	33
Chaves	0	0	0	0	0	6
DeBaca	0	0	0	0	0	2
Luna	0	0	0	0	0	1
Roosevelt	0	0	0	0	0	1
Ttl. Apr.	55	16,669	5	3	11	138
Ttl. Mar.	36	24,405	5	2	23	116
Difference	19	7,736	0	1	12	22

Wyoming

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Big Horn	0	0	0	0	0	8
Campbell	0	0	0	0	0	3
Carbon	0	0	0	0	1	2
Converse	2	0	2	0	0	8
Fremont	0	0	0	0	0	9
Natrona	0	0	0	0	1	2
Niobrara	2	11,860	0	0	2	11
Park	0	0	0	0	0	3
Sublette	0	0	0	0	0	6
Sweetwater	0	0	0	0	0	2
Uinta	0	0	0	0	0	4
Weston	1	0	1	0	1	9
Miscellaneous	0	0	0	0	0	5
Ttl. Apr.	5	11,860	3	0	5	72
Ttl. Mar.	9	5,756	0	0	5	68
Difference	4	6,104	3	0	0	4

Utah

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ttl. Mar	0	0	0	0	1	3
Ttl. Apr.	0	0	0	0	1	3
Difference	0	0	0	0	0	0

Colorado

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Archuleta	0	0	0	0	0	3
Fremont	0	0	0	0	0	2
Huerfano	0	0	0	0	0	2
La Plata	0	0	0	0	0	1
Las Animas	0	0	0	0	0	2
Mesa	0	0	0	0	0	1
Moffat	0	0	0	0	0	2
Park	0	0	0	0	0	1
Pueblo	0	0	0	0	1	2
Rio Blanco	0	0	0	0	1	1
Routt	0	0	0	0	0	2
Miscellaneous	0	0	0	0	0	7
Ttl. Apr.	0	0	0	0	2	27
Ttl. Mar.	2	0	1	1	1	28
Difference	2	0	1	1	1	1

Montana

Summary of Field Operations

Big Horn	0	0	0	0	0	2
Carbon	0	0	0	0	0	7
Fergus	0	0	0	0	0	5
Glacier	8	700	2	1	3	7
Hill	0	0	0	0	0	2
Petroleum	0	0	0	0	0	2
Teton	0	0	0	0	0	2
Toole	8	614	2	0	0	9
Yellowstone	0	0	0	0	0	1
Miscellaneous	0	0	0	0	1	7
Ttl. Apr.	16	1,314	4	1	4	44
Ttl. Mar.	10	413	0	3	3	53
Difference	6	901	4	2	1	9

EASTERN FIELDS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bradford	164	213	0	0	17	57
Allegany	47	59	0	0	7	28
Middle district	9	8	0	2	4	12
Butler-Armstrong	4	3	2	0	4	9
N.Y.-Pa. gas area	9	0	6	3	7	20
SW. Pa.	8	1	1	6	3	17
SE. Ohio	24	54	7	13	5	33
W. Virginia	34	29	5	24	19	71
Ttl. Apr.	299	367	21	48	66	247
Ttl. Mar.	260	451	11	44	68	235
Difference	39	84	10	4	2	12

WESTERN KENTUCKY

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Breckenridge	1	0	1	0	0	5
Butler	3	10	2	0	0	4
Christian	1	0	1	0	0	1
Daviess	10	451	2	0	1	17
Grayson	1	0	1	0	0	1
Hancock	0	0	0	0	0	7
Henderson	3	1,550	1	0	0	8
Hopkins	0	0	0	0	0	3
McLean	2	25	1	0	0	2
Muhlenberg	0	0	0	0	0	7
Ohio	9	42	6	0	0	7
Todd	0	0	0	0	0	1
Webster	0	0	0	0	0	2
Ttl. Apr.	30	2,078	15	0	1	65
Ttl. Mar.	48	853	30	4	5	78
Difference	18	1,225	15	4	4	13

EASTERN KENTUCKY

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Lee	4	85	1	0	0	4
Powell	2	19	0	0	1	2
Knott	2	0	0	2	2	6
Floyd	2	0	0	2	1	7
Martin	1	6	0	0	2	3
Pike	1	0	0	1	1	2
Wolfe	1	0	1	0	0	1
Knox	0	0	0	0	0	1
Magoffin	0	0	0	0	0	3
Ttl. Apr.	13	110	2	5	7	29
Ttl. Mar.	13	16	2	7	5	29
Difference	0	94	0	2	2	0

ILLINOIS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Alexander	0	0	0	0	0	1
Bond	0	0	0	0	0	7
Champaign	0	0	0	0	0	2
Christian	0	0	0	0	1	1
Clark	3	10	2	0	0	5
Clay	21	10,756	2	0	1	19
Clinton	6	264	2	0	1	7
Coles	2	10	0	0	0	2
Crawford	1	0	1	0	0	2
Cumberland	0	0	0	0	0	3
Edgar	1	0	1	0	0	2
Effingham	1	0	1	0	0	1
Fayette	86	16,701	6	0	11	92
Fulton	0	0	0	0	0	1
Franklin	0	0	0	0	0	2
Gallatin	4	0	4	0	2	3
Hamilton	0	0	0	0	0	1
Jasper	2	0	2	0	0	1
Jefferson	5	528	3	0	1	9
Johnson	1	0	1	0	0	1
Knox	0	0	0	0	0	1
Lawrence	4	15	3	0	0	7
Macon	1	0	1	0	0	0
Macoupin	1	0	1	0	0	0
Marion	88	12,265	8	0	15	81
Madison	2	6	1	0	1	0
Massac	0	0	0	0	0	2
McLean	0	0	0	0	0	1
McDonough	0	0	0	0	0	1
Menard	1	0	1	0	0	0
Montgomery	1	0	1	0	2	4
Perry	2	0	2	0	0	3
Pike	0	0	0	0	0	1
Randolph	0	0	0	0	0	1
Richland	13	1,563	4	0	1	13
Sangamon	1	0	1	0	0	1
St. Clair	3	261	1	0	2	8
Salina	0	0	0	0	0	4
Shelby	2	0	2	0	1	3
Tazewell	0	0	0	0	0	1
Wabash	1	0	1	0	0	2
Warren	0	0	0	0	0	1
Washington	8	1,658	1	0	3	25
Hancock	1	3	0	0	0	0
Wayne	17	2,874	4	0	8	27
White	1	0	1	0	4	4
Ttl. Apr.	280	46,914	58	0	54	354
Ttl. Mar.	186	32,017	40	1	56	314
Difference	94	14,897	18	1	2	40

OHIO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ashland	3	5	1	1	1	2
Athens	5	5	2	2	4	11
Coshocton	0	0	0	0	0	2
Cuyahoga	1	0	0	1	2	5
Fairfield	2	0	0	2	0	1
Gallia	0	0	0	0	1	1
Guernsey	3	0	0	3	3	7
Hocking	0	0	0	0	2	0
Holmes	3	0	1	2	2	2
Knox	2	0	2	0	3	8
Lawrence	1	0	0	1	2	1
Licking	8	10	1	6	3	11
Lorain	0	0	0	0	0	1
Medina	6	4	5	0	0	3
Meigs	3	0	2	1	2	2
Monroe	2	0	1	1	1	3
Morgan	4	15	2	1	2	0
Muskingum	1	0	0	1	2	4
Noble	5	0	1	4	2	6
Perry	4	0	1	3	1	4
Richland	0	0	0	0	0	1
Stark	5	0	3	2	0	8
Summit	2	0	0	2	0	0
Tuscarawas	0	0	0	0	0	4
Washington	9	25	2	4	4	7
Wayne	1	22	0	0	0	1
Ttl. Apr.	70	86	24	37	37	95
Ttl. Mar.	51	286	14	26	33	103
Difference	19	200	10	11	4	8

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Auglaize	0	0	0	0	0	2
Henry	1	2	0	0	0	1
Preble	1	0	1	0	0	0
Putnam	0	0	0	0	0	1
Seneca	0	0	0	0	0	1
Wood	0	0	0	0	0	3
Wyandot	0	0	0	0	0	1
Ttl. Apr.	2	2	1	0	0	10
Ttl. Mar.	5	2	4	0	0	10
Difference	3	0	3	0	0	0

INDIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Blackford	0	0	0	0	0	1
Crawford	0	0	0	0	0	2
Daviess	0	0	0	0	1	3
DuBois	1	0	1	0	0	1
Gibson	0	0	0	0	4	13
Knox	0	0	0	0	0	6
Martin	0	0	0	0	0	1
Monroe	1	0	1	0	0	0
Orange	0	0	0	0	0	1
Perry	1	0	0	1	1	4
Pike	0	0	0	0	0	4
Posey	2	75	1	0	3	4
Spencer	3	50	1	1	1	5
Sullivan	2	10	0	1	0	6
Vanderburgh	4	0	4	0	2	3
Vigo	2	30	1	0	2	3
Warrick	1	0	1	0	1	1
White	0	0	0	0	0	2
Hancock	0	0	0	0	1	0
Jay	0	0	0	0	0	2
Madison	0	0	0	0	1	1
Decatur	1	0	0	1	0	0
Johnson	0	0	0	0	0	1
Whitley	0	0	0	0	0	1
Ttl. Apr.	18	165	10	4	17	65
Ttl. Mar.	12	198	4	4	0	47
Difference	6	33	6	0	17	18

MICHIGAN

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Bangor	3	440	1	0	1	3
Bloomingdale	20	4,085	5	0	1	10
Clayton	3	0	0	3	0	1
Columbia	6	4,448	0	0	1	9
Deerfield	0	0	0	0	0	1
Edmore	1	0	0	1	0	1
Freeman	7	4,507	1	0	3	15
Gobles	8	3,120	6	0	2	4
Grand Rapids	8	6,303	4	0	2	12
Hopkinsburg	5	190	4	0	0	0
Loomis	3	308	1	2	0	2
New Salem	4	2,000	0	0	0	6
Overisel	0	0	0	0	0	1
SE. Columbia	7	2,900	1	0	0	6
Salem	6	2,245	1	0	1	5
Skunk Lake	2	200	1	0	0	3
Stewart	2	350	0	0	1	4
Trowbridge	0	0	0	0	0	1
West Branch	1	30	0	0	0	2
Winfield	1	0	1	0	2	1
Wisner	0	0	0	0	0	2
Wildcats	34	8	32	0	2	45
Ttl. Apr.	121	31,134	58	6	18	135
Ttl. Mar.	116	47,034	34	1	28	158
Difference	5	15,900	24	5	10	23

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Cole, F. E., No. 1 Ferini, Santa Maria Valley, S. B.	15-10-35	4,060	sd. sh. drlg.
Union Oil, No. 5 Vicente, Santa Maria Valley, S. B.	21-10-34	2,298	rigging up
Petrol Corp., No. 32-A Tognazzini, Gato Ridge, S. B.	9- 8-32	2,990	redrlg. 2,850
Arnold, E. C., No. 2 Careaga, Los Alamos, S. Barbara	8- 8-33	6,851	fish D.C. & B.
Field, O. C., No. 1 White, Cat Canyon, Santa Barbara	21- 9-33	5,851	hd. sh. drlg.
United West. Oil, No. 1 Los Olivos, Santa Barbara	16- 7-30	3,750	fish junk
Richfield Oil, No. 1 San Marcos, Sisquoc, Santa Barb.	20- 6-29	1,796	sd. sh. drlg.
Litho Oil, No. 1 R. I. E., Capitan, Santa Barbara	5- 4-30	3,070	idle
General Pet., No. 4 More, Goleta, Santa Barbara	15- 4-28	2,583	sd. sh. drlg.
Glenray Oil, No. 1 Williams, Summerland, Santa Barb.	1- 4-26	200	cleaning out
Merchants Pet., No. 8 Hillside, Sespe, Ventura	1- 4-20	1,910	pump 50 b.d.
Ivers, H. A., No. 14 Kentuck, Sespe, Ventura	1- 4-20	1,400	bailing
Section 20 Oil, No. 21, Sespe, Ventura	20- 5-19	2,862	sd. sh. drlg.
English, J. A., No. 1 Lankershim, Hopper Can., Vent.	13- 4-19	1,380	sd. sh. drlg.
Shomy Oil, No. 1 Hill, Bardsdale, Ventura	32- 4-19	830	idle
Levesque, G. M., No. 1 Robertson, Simi, Ventura	17- 2-18	1,798	sd. sh. drlg.
Galveston Oil, No. 1 Basola, Bardsdale, Ventura	5- 3-19	2,990	sd. sh. drlg.
Texas Co., No. 137 Shiells, Shiells Canyon, Ventura	4- 3-19	2,593	sd. sh. drlg.
El Rancho Oil, No. 3 Elkins, Shiells Canyon, Ventura	9- 3-19	2,841	sd. sh. drlg.
Continental Oil, No. 11 Grubb, San Miguelito, Ventura	24- 3-24	5,398	sd. sh. drlg.
C. C. M. Oil, No. 7-A Hobson, Padre Canyon, Ventura	15- 3-24	5,750	fish D.P.
C. C. M. Oil, No. 27-B Hobson, Rincon, Ventura	16- 3-24	4,917	P.B. 4,850
Tide Water A. O., No. 34 V.L.W., Vent. Ave., Vent.	24- 3-23	6,462	sd. sh. drlg.
Tide Water A. O., No. 40 V.L.W., Vent. Ave., Vent.	25- 3-23	10,020	sd. sh. drlg.
Tide Water A. O., No. 14 McGonigle, Vent. Ave., Vent.	23- 3-23	8,591	sd. sh. drlg.
Tide Water A. O., No. 84 Lloyd, Vent. Ave., Ventura	27- 3-23	1,998	sd. sh. drlg.
Tide Water A. O., No. 123 Lloyd, Ventura Ave., Vent.	27- 3-23	8,635	idle
Tide Water A. O., No. 124 Lloyd, Ventura Ave., Vent.	23- 3-23	7,960	sd. sh. drlg.
Tide Water A. O., No. 8 Hartman, Ventura Ave., Vent.	22- 3-23	8,565	O.S. drlg.
Shell Oil, No. 99 Taylor, Ventura Ave., Ventura	29- 3-23	5,572	sd. sh. drlg.
Shell Oil, No. 33 Edison, Ventura Ave., Ventura	28- 3-23	8,290	cmtd. 7,672
Brit. Amer. Oil, No. 7 Bolsa, Ventura Ave., Ventura	22- 3-23	7,899	C.O. 7,898
Lloyd Corp., No. 2 Dabney, Ventura Ave., Ventura	23- 3-23	9,813	redrlg. 9,500
Auman, Allen, No. 1 Theta, Lost Hills, Kern	12-26-20	1,599	idle
Belridge Oil, No. 35-38, North Belridge, Kern	35-27-20	6,750	br. sh. drlg.
Belridge Oil, No. 28-16, North Belridge, Kern	28-27-20	8,355	O.S. drlg.
Belridge Oil, No. 28-25, North Belridge, Kern	28-27-20	8,500	will deepen
Tide Water A. O., No. 21, North Belridge, Kern	21-27-20	3,795	sd. sh. drlg.
Richfield Oil, No. 3 Belridge, North Belridge, Kern	22-27-20	7,569	redrlg. 6,180
Standard Oil, No. 2 T. G. & T., Delano, Kern	2-25-23	2,430	blowout
Atlas Pet., No. 1 Moore, Delano, Kern	7-25-25	3,802	P.B. 3,585
Dilamar Oil, No. 3 Quinn, Jasmin, Kern	15-25-27	2,902	idle
Pan-May Oil, No. 1 Kelly, Round Mountain, Kern	31-27-29	968	gr. sd. drlg.
Berryman, F. L., No. 1 Kern, Kern River, Kern	27-28-28	466	O.S. drlg.
D. B. K., No. 4 Kern, Kern River, Kern	34-28-28	366	O.S. drlg.
Hast Oil, No. 5 Kern, Kern River, Kern	34-28-28	510	pump 10 b.d.
Little & Gilstrap, No. 2 Keating, Premier, Kern	20-27-27	2,458	wet; abd.
Wright & Eyer, No. 1 Dome, Mount Poso, Kern	28-26-28	1,509	cmtd. 1,500
Crestmont Oil, No. 1 Buchner, Mount Poso, Kern	20-26-28	1,547	O.S. drlg.
Ring Oil, No. 3 Blackfoot, Mount Poso, Kern	22-26-28	1,903	gr. sd. drlg.
Texas Co., No. 1 Jewett, Arvin, Kern	16-31-29	6,020	sd. sh .drlg.
Standard Oil, No. 2 Jewett, Arvin, Kern	16-31-29	2,984	sd. sh. drlg.
Universal Consd., No. 1 Derby, Arvin, Kern	15-31-29	6,110	sd. sh. drlg.
Harris, S. F., No. 1 Zenith, Sivert, Kern	27-30-30	462	sd. sh. drlg.
Western Gulf Oil, No. 1 Bellevue, Fruitvale, Kern	34-29-27	3,931	pump 75 b.d.
Western Gulf Oil, No. 42-B, KCL, Fruitvale, Kern	14-29-27	2,945	will redrl.
Smith, H. G., No. 1 Galtes, Fruitvale, Kern	14-29-27	2,932	tested wet
Pacific O. & G. Dev., No. 3 Guisti, Fruitvale, Kern	14-29-27	2,964	will deepen
Pacific Southwest Oil, No. 1 Dillon, Fruitvale, Kern	27-29-27	4,068	deepening
Standard Oil, No. 8-2-B, KCL, Wasco, Kern	17-27-24	13,135	completing
Union Oil, No. 1-36, KCL, Shafter, Kern	36-27-24	12,985	cleaning out
Cal. Expl., No. 1 Dougherty-Salisbury, Buttonw., Kern	7-29-24	12,940	sd. sh. drlg.
General Pet., No. 2 Van Ness, Rio Bravo, Kern	2-29-25	10,170	sd. sh. drlg.
Union Oil, No. 8-34, KCL, Rio Bravo, Kern	34-28-25	11,180	sd. sh. drlg.
Superior Oil, No. 1 Moodie, Rio Bravo, Kern	26-28-25	11,550	O.S. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	11,900	P.B. 11,600
Standard Oil, No. 11-17, KCL, Greeley, Kern	18-29-26	11,517	flow 6,390 b.d.
Standard Oil, No. 11-18, KCL, Greeley, Kern	18-29-26	7,790	sd. sh. drlg.
Standard Oil, No. 12-6, KCL, Greeley, Kern	30-29-26	10,940	br. sh. drlg.
Continental Oil, No. 2-D, KCL, Bellvue, Kern	14-30-26	7,096	sd. sh. drlg.
Shell Oil, No. 78-24-A, KCL, Ten Section, Kern	24-30-25	6,498	sd. sh. drlg.
Shell Oil, No. 36-14-A, KCL, Canal, Kern	14-30-25	8,168	O.S. drlg.
Shell Oil, No. 87-4-B, KCL, Canal, Kern	4-30-25	13,960	no oil; abd.
Tide Water A. O., No. 35-E, KCL, North Canal, Kern	7-30-26	8,391	sd. sh. drlg.
Ohio Oil, No. 12-E, KCL, Canal, Kern	14-30-25	6,181	sd. sh. drlg.
Richfield Oil, No. 12-33-A, KCL, Tupman, Kern	33-30-25	2,785	sd. sh. drlg.
Standard Oil, No. 21-1, KCL, Tupman, Kern	19-30-25	8,100	sd. sh. drlg.
Richfield Oil, No. 14-3-B, KCL, Coles Levee, Kern	3-31-25	7,360	sd. sh. drlg.
Tide Water A. O., No. 61, KCL, Coles Levee, Kern	14-31-25	9,550	sd. sh. drlg.
Standard Oil, No. 20-1, KCL, Coles Levee, Kern	9-31-25	9,130	O.S. drlg.
Ohio Oil, No. 2-F, KCL, Coles Levee, Kern	10-31-25	9,672	will P.B.
Standard Oil, No. 218-15-D fee, Midway-Sunset, Kern	15-32-24	2,098	sd. sh. drlg.
Vista Grande Oil, No. 1 Schultz, Midway-Sunset, Kern	36-32-23	3,630	cleaning out
Van Fleet & Durkee, No. 3 Hoyst, Midw.-Sunset, Kern	36-32-23	2,510	cleaning out
General Pet., No. 1 B.V.A., Midway-Sunset, Kern	1-32-24	4,329	sd. sh. drlg.
Manley & McGinn, No. 15 Midway, Midw.-Sun., Kern	15-31-22	1,232	rig to pump
Par Oil & Gas, No. 1 Hager, Midway-Sunset, Kern	16-31-22	1,630	gr. sd. drlg.
West. Gulf, No. 1 Panhandle, Buena Vista Lake, Kern	3-32-26	2,155	sd. sh. drlg.
Gates, F. E., No. 2 Laymance, McKittrick, Kern	20-30-22	1,474	pump water
Robertson, E. D., No. 1 Smith, McKittrick, Kern	13-30-21	1,161	wet; abd.
Richfield Oil, No. 1 KCL, Wheeler Ridge, Kern	28-11-20	10,825	sd. sh. drlg.
Continental Oil, No. 1-F, KCL, San Emidio, Kern	5-10-21	1,705	sd. sh. drlg.
Shell Oil, No. 76-31 Union, San Emidio, Kern	31-11-22	2,590	hd. sh. drlg.
Shell Oil, No. 48-30 Port Costa, Turk, Fresno	30-17-16	7,530	sd. sh. drlg.
Stuart Oil, No. 1 Hill, W. Coalinga, Fresno	12-21-14	1,410	rig to pump
Tyler & Cornwell, No. 4 Tyler, W. Coalinga, Fresno	14-20-14	280	bail water
Rylatt, Harry, No. 3 Kipling, W. Coalinga, Fresno	26-20-14	1,461	deepening
Petseahon, No. 31-7-F, S.E. Coalinga, Fresno	7-20-16	7,268	flow 3,600 b.d.
Petseahon, No. 62-7-F, S.E. Coalinga, Fresno	7-20-16	7,745	O.S. drlg.
Petseahon, No. 75-7-F, S.E. Coalinga, Fresno	7-20-16	2,293	sd. sh. drlg.
Petseahon, No. 3-18-F, S.E. Coalinga, Fresno	18-20-16	7,272	flow 2,635 b.d.
Texas Co., No. 1 Exeter fee, S.E. Coalinga, Fresno	6-20-16	7,190	hd. sh. drlg.
Standard Oil, No. 73-13-C fee, S.E. Coalinga, Fresno	13-20-15	7,080	O.S. drlg.
Superior Oil, No. 6 fee, S.E. Coalinga, Fresno	7-20-16	7,597	sd. sh. drlg.
Superior Oil, No. 2 Cagle, S.E. Coalinga, Fresno	6-20-16	6,770	sd. sh. drlg.
Superior Oil, No. 1 P.W.F., S.E. Coalinga, Fresno	22-20-15	2,146	sd. sh. drlg.
Holly Dev., No. 82-12-C, S.E. Coalinga, Fresno	12-20-15	3,580	sd. sh. drlg.
K. N. D. A., No. 54-24-H, Kettleman North, Fresno	24-21-16	10,870	O.S. drlg.
K. N. D. A., No. 4-18-Q, Kettleman North, Kings	18-22-18	7,685	sd. sh. drlg.
K. N. D. A., No. 2-20-Q, Kettleman North, Kings	20-22-18	6,384	sd. sh. drlg.
K. N. D. A., No. 6-22-Q, Kettleman North, Kings	22-22-18	7,925	recmtd. 7,645
K. N. D. A., No. 58-22-Q, Kettleman North, Kings	22-22-18	6,992	br. sh. drlg.
K. N. D. A., No. 4-26-Q, Kettleman North, Kings	26-22-18	5,475	sd. sh. drlg.
Standard Oil, No. 261-11-P, Kettleman North, Kings	11-22-17	7,666	flow gas
Standard Oil, No. 87-7-Q, Kettleman North, Kings	7-22-18	5,482	sd. sh. drlg.
Standard Oil, No. 52-17-Q, Kettleman North, Kings	17-22-18	7,191	br. sh. drlg.
Standard Oil, No. 74-17-Q, Kettleman North, Kings	17-22-18	8,385	hd. sh. drlg.
Standard Oil, No. 85-17-Q, Kettleman North, Kings	17-22-18	5,269	sd. sh. drlg.
Standard Oil, No. 87-17-Q, Kettleman North, Kings	17-22-18	2,194	sd. sh. drlg.
Standard Oil, No. 81-19-Q, Kettleman North, Kings	19-22-18	7,470	sd. sh. drlg.
Standard Oil, No. 41-21-Q, Kettleman North, Kings	21-22-18	7,940	hd. sd. drlg.
Standard Oil, No. 72-21-Q, Kettleman North, Kings	21-22-18	6,197	sd. sh. drlg.
Standard Oil, No. 83-21-Q, Kettleman North, Kings	21-22-18	7,785	cmtd. 7,147
Epco, Inc., No. 1 Cuyama, Creston, San Luis Obispo	27-27-13	5,250	hd. sh. drlg.
Newton, S. M., No. 1 Stafford, Panorama, S. L. Obispo	18-21-21	2,697	sd. sh. drlg.
Texas Co., No. 1 Arroyo Seco, Greenfield, Monterey	11-19- 5	3,791	sd. sh. drlg.
Standard Oil, No. 1 Calpac, Rio Vista, Solano	15- 5- 2	1,987	sd. sh. drlg.
Buttes Oilfields, No. 5 Butte, Sutter Buttes, Sutter	1-15- 1	1,964	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
D. & J. Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	152	sd. sh. drlg.
F. S. D. Oil, No. 1 Willacy, Torrance, Los Angeles	23- 4-14	3,790	rig to pump
Kildumac Oil, No. 1 Mitchell, Torrance, Los Angeles	23- 4-14	5,144	O.S. drlg.
Lone Star Drlg., No. 2 Pestor, Torrance, Los Angeles	23- 4-14	5,170	flow 160 b.d.
Packard Oil, No. 1 Louden, Torrance, Los Angeles	23- 4-14	5,086	sd. sh. drlg.
Pac. West. Oil, No. 22 Lomita, Torrance, Los Angeles	23- 4-14	4,794	sd. sh. drlg.
Standard Oil, No. 1-11 Marble, Torrance, Los Angeles	22- 4-14	4,800	sd. sh. drlg.
Shadle Pet., No. 1 Kettler, Torrance, Los Angeles	23- 4-14	5,090	pump 120 b.d.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd. cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill stem test.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., owell drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing)
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C., or W.O.C.S., waiting on cement to set.
W.O.O., waiting for orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

General Pet., No. 7 Poggi, Harbor City, Los Angeles	23-	4-14	3,800	cleaning out
General Pet., No. 13 Poggi, Harbor City, Los Angeles	23-	4-14	5,190	flow 151 b.d.
Texas Co., No. 6 Oakley, Harbor City, Los Angeles	30-	4-13	2,467	sd. sh. drlg.
Union Oil, No. 67 Callender, Dominguez, Los Angeles	33-	3-13	7,799	P.B. 7,235
Union Oil, No. 68 Callender, Dominguez, Los Angeles	32-	3-13	7,491	sd. sh. drlg.
Union Oil, No. 11 Carson, Dominguez, Los Angeles	33-	3-13	8,508	flow 150 b.d.
Shell Oil, No. 98 Reyes, Dominguez, Los Angeles	33-	3-13	6,175	sd. sh. drlg.
Universal Consd., No. 15 Trust, Rosecrans, L. A.	18-	3-13	7,817	cleaning out
Royalty Ser. Corp., No. 4 Gordon, Rosecrans, L. A.	19-	3-13	3,580	sd. sh. drlg.
Bankline Oil, No. 1 Kirby, Rosecrans, Los Angeles	19-	3-13	7,653	redrlg. 7,290
Howard Oil, No. 1 H. O., Rosecrans, Los Angeles	20-	3-13	7,298	sd. sh. drlg.
Wilshire Oil, No. 1 Leitch, Rosecrans, Los Angeles	19-	3-13	7,350	sd. sh. drlg.
Marion, J. H., No. 2 Athens, Rosecrans, Los Angeles	19-	3-13	7,890	O.S. drlg.
Beloil Corp., No. 1 Castleberry, Potrero, Los Angeles	28-	2-14	5,450	fish csg.
Standard Oil, No. 1 Ward, Aliso Canyon, Los Angeles	27-	3-16	6,370	sd. sh. drlg.
Tide Water A. O., No. 11 Porter, Aliso Canyon, L. A.	27-	3-16	2,020	hd. sd. drlg.
Union Oil, No. 1-27 Orcutt, Aliso Canyon, Los Angeles	27-	3-16	5,980	run liner
Mangrum & Page, No. 1 Lintz, Newhall, Los Angeles	4-	3-15	400	idle
O'Donnell, J. E., No. 1 Hammond, Newhall, L. A.	8-	3-16	4,891	idle
General Pet., No. 35 Ford, Wilmington, Los Angeles	4-	5-13	2,525	sd. sh. drlg.
General Pet., No. 9 S.P., Wilmington, Los Angeles	2-	5-13	2,596	sd. sh. drlg.
Hollywood Oil, No. 7 Baxter, Wilmington, L. A.	35-	4-13	511	sd. sh. drlg.
Long Beach Dev., No. 1-X Harbor, Wilmington, L. A.	3-	5-13	2,380	sd. sh. drlg.
Long Beach Dev., No. 2-X Harbor, Wilmington, L. A.	2-	5-13	2,391	sd. sh. drlg.
Long Beach Dev., No. 3-X Harbor, Wilmington, L. A.	2-	5-13	2,396	sd. sh. drlg.
Long Beach Dev., No. 4-X Harbor, Wilmington, L. A.	2-	5-13	2,465	sd. sh. drlg.
Long Beach Dev., No. 5-X Harbor, Wilmington, L. A.	2-	5-13	2,369	sd. sh. drlg.
Long Beach Dev., No. 6-X Harbor, Wilmington, L. A.	2-	5-13	2,596	sd. sh. drlg.
Long Beach Dev., No. 1-Y Harbor, Wilmington, L. A.	2-	5-13	2,484	sd. sh. drlg.
Richfield Oil, No. 30-P.D., Wilmington, Los Angeles	2-	5-13	3,065	sd. sh. drlg.
Security Drlg., No. 3 O. & B., Wilmington, L. A.	35-	4-13	2,880	sd. sh. drlg.
Signal O. & G., No. 1-C.D., Newport, Wilmington, L. A.	2-	5-13	4,300	O.S. drlg.
Signal O. & G., No. 2-C.D., Newport, Wilmington, L. A.	2-	5-13	3,995	O.S. drlg.
Signal O. & G., No. 1-S.P., Wilmington, Los Angeles	2-	5-13	2,560	sd. sh. drlg.
Superior Oil, No. 1 Seaside, Wilmington, Los Angeles	2-	5-13	5,550	P.B. 2,911
Termo Co., No. 5-D, L.B.H.D., Wilmington, L. A.	3-	5-13	2,398	sd. sh. drlg.
Union Pacific R.R., No. 106, Wilmington, Los Angeles	34-	4-13	4,078	flow 910 b.d.
Union Pacific R.R., No. 109, Wilmington, Los Angeles	3-	5-13	2,571	sd. sh. drlg.
Union Pacific R.R., No. 16-E, Wilmington, L. A.	3-	5-13	1,974	sd. sh. drlg.
Union Pacific R.R., No. 17-E, Wilmington, L. A.	3-	5-13	3,391	sd. sh. drlg.
Ridge Oil, No. 1 Club, Montebello, Los Angeles	3-	2-12	6,280	sd. sh. drlg.
St. Helens Pet., No. 30 Monterey, Montebello, L. A.	2-	2-12	7,275	cleaning out
St. Helens Pet., No. 2 Eggleston, Montebello, L. A.	2-	2-12	7,171	P.B. 7,145
St. Helens Pet., No. 2 Taylor, Montebello, Los Angeles	2-	2-12	7,135	completing
Standard Oil, No. 4 Harvey, Montebello, L. A.	2-	2-12	6,673	milling 6,297
Standard Oil, No. 5 Whitehead, Montebello, L. A.	3-	2-12	7,185	O.S. drlg.
Standard Oil, No. 6 Whitehead, Montebello, L. A.	3-	2-12	7,175	sd. sh. drlg.
Union Oil, No. 2 Wilcox, Montebello, Los Angeles	2-	2-12	6,703	flow 420 b.d.
Union Oil, No. 2 Howard & Smith, Montebello, L. A.	2-	2-12	5,998	sd. sh. drlg.
Union Oil, No. 5 Howard & Smith, Montebello, L. A.	2-	2-12	5,881	sd. sh. drlg.
Union Oil, No. 5 Paul Howard, Montebello, L. A.	2-	2-12	2,197	sd. sh. drlg.
Stanley Oil, No. 1 Montebello, Montebello, L. A.	2-	2-12	7,010	redrlg. 5,865
Bev. Mont. Oil, No. 1 West, Montebello, Los Angeles	2-	2-12	3,596	sd. sh. drlg.
Mont. Wesco, Inc., No. 1 Montebello, Montebello, L. A.	2-	2-12	7,120	sd. sh. drlg.
Mont. Reservoir Oil, No. 2 Water, Montebello, L. A.	2-	2-12	6,990	O.S. drlg.
Pongratz Pet., No. 1 Newmark, Montebello, L. A.	2-	2-12	7,361	O.S. drlg.
La Merced Drlg., No. 1 Drake, Montebello, L. A.	2-	2-12	6,705	deepening
V-8 Oil, No. 1 M.B., Montebello, Los Angeles	2-	2-12	7,600	O.S. drlg.
Wood-Callahan Oil, No. 1 Harris, Montebello, L. A.	2-	2-12	7,575	flow 1,350 b.d.
Bush Oil, No. 1 Olds, Montebello, Los Angeles	3-	2-12	7,191	flow 906 b.d.
Herley-Kelly, Inc., No. 2 Masser, Montebello, L. A.	2-	2-12	5,150	sd. sh. drlg.
Colorado Oil, No. 19 Granger, Whittier, L. A.	22-	2-11	3,130	sd. sh. drlg.
Taylor Prod. Co., No. 1 Gregg, Whittier, Los Angeles	17-	2-11	2,170	sd. sh. drlg.
Perry & Associates, No. 1 Pool, Long Beach, L. A.	29-	4-12	5,790	deep test
Tide Water A. O., No. 54 Anaheim, E. Coyote, Orange	24-	3-10	3,634	will deepen
Bartholomae Oil, No. 8 Stern, E. Coyote, Orange	22-	3-10	4,788	O.S. drlg.
Standard Oil, No. 67 Emery, W. Coyote, Orange	24-	3-11	3,230	O.S. drlg.
Severns Drlg., No. 4 McNally, W. Coyote, Orange	24-	3-11	2,370	sd. sh. drlg.
Southwest Expl., No. 15 State, Hunt. Beach, Orange	10-	6-11	5,950	cleaning out
Southwest Expl., No. 16 State, Hunt. Beach, Orange	10-	6-11	2,687	sd. sh. drlg.
Southwest Expl., No. 18 State, Hunt. Beach, Orange	10-	6-11	4,190	sd. sh. drlg.

OKLAHOMA

Week Ending May 20

NORTHERN OKLAHOMA

Atoka County

Giblett No. 1 Rich, SE SE SW Sec. 2-1-12. S.D. 728 ft.

Cleveland County

Nels Burton No. 1 Boggs, NE NE SE Sec. 16-9-2w. Drlg. 6,155 ft.

Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; rerng. Reda.

Comanche County

Mid Night Oil No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; drlg. 787 ft.

Ellis County

Enterprize Drlg. Co. No. 1 Wahl, SE NW NW Sec. 1-19-25w. Sd. 660-65 ft.; T.D. 730 ft.; S.D.O.

Garfield County

Kerlyn Oil Co. No. 1 Hein, NW NW NW Sec. 36-22-4w. S.D. 3,482 ft.; reps.

Garvin County

Ker-Lyn Oil Co. No. 1 Butterly, NE NE SE Sec. 22-1-1. O.W.D.D.; O.T.D. 3,205 ft.; T.D. 5,005 ft.; cmtd. perf. except two; 2,730-32 ft.; rec. 2,600,000 cu. ft. gas.

Grant County

Carter Oil No. 1 Staggers, C W½ SE NW Sec. 4-25-3w. Miss. 4,771 ft.; drlg. 4,934 ft.

Smythe & O'Mara No. 1 State, C SE SW Sec. 16-25-4w. Drlg. 1,210 ft.

Harmon County

Russe Drlg. No. 1 Abernathey, C SW SW Sec. 12-2-26w. (3,000-ft. test). Drlg. 263 ft.

Harper County

Sinclair Prairie No. 1 George, SW SW SW Sec. 5-27-23w. Layton 4,450 ft.; T. D. 4,539 ft.; S.D.; blowout preventer.

Hughes County

Carter Oil No. 1 Hamilton, C W½ NE SW Sec. 33-4-9. T.D. 4,235 ft., S.D.

Continental Oil No. 1 Hudson, SE SE SE Sec. 8-4-9. Drlg. sh. 3,627 ft.

Jackson County

English & Morgan No. 1 Lee, NW NW SE Sec. 36-2-19w. S.G. 1,360-63 ft.; T.D. 1,603 ft.; S.D.O.

Kingfisher County

K. A. Ellison No. 1 Baker, NE NE SE Sec. 20-19-5w. Miss. 6,290 ft.; T.D. 6,-920 ft.; set pig. and P.B.; W.O.C.

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Miss. 7,014 ft.; Woodford 7,531 ft.; Msnr. 7,562 ft.; Wlx. 8,-105 ft.; 2nd Wlx. 8,275 ft.; T.D. 8,330 ft.; S.D.O.

Kiowa County

C. J. Hagerling No. 1 Kimray, SW SW NW Sec. 36-5-18w. S.D. 750 ft.

Pure Oil Co. No. 1 Fuqua, SW SW NE Sec. 18-6-16w. Vla. 1,990 ft.; wtr. at T.D., 2,019 ft.; D.&A.

Russell S. Tarr No. 1 Kelsay, SW SW NW Sec. 20-7-17w. Pay 1,050-51½ ft.; F. 10 B.O.P.D. by hds.

Lincoln County

Cooper Drlg. No. 1 Johnson, NE NE NW Sec. 32-15-5. Drlg. 1,520 ft.

Fain Drlg. Co. No. 1 Wertman, SW SW SW Sec. 12-15-4. Drlg. 2,908 ft.

Helmerich & Payne No. 1 Johnson, SE SE SE Sec. 2-15-1. Drlg. 4,676 ft.

Star Oil Co. No. 1 Morrow, SE SE SW Sec. 28-15-6. Prue 3,206-31 ft.; T.D. 3,-270 ft.; S.D.O.

W. A. Villines No. 1 Marshall, NW NE NE Sec. 28-15-4. Drlg. 3,325 ft.

Oklahoma County

R. Olsen No. 1 White, C NE NE Sec. 30-11-1. Vla. 6,338 ft.; dolo. 6,410 ft.; Wlx. 6,503 ft.; 2nd Wlx. 6,610 ft.; T. D. 6,636 ft.; F. 250 B.O. in 24 hrs.; cut 28%; to acdz.

O. A. Walters No. 1 Olmstead, C E½ SE NW Sec. 12-14-3w. Wdfd. 6,050 ft.; Vla. 6,290 ft.; Wlx. 6,420 ft.; 2d Wlx. 6,492 ft.; rec. wtr; D.&A.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. T.D. 2,845 ft.; fsg.

Payne County

Kirk-Greenway No. 1 Kautz, NW SW SE Sec. 6-18-2. T.D. 3,800 ft.; fsg.

Pittsburg County

Phillips Pet. Co. No. 1 Hubacker, C NW NE Sec. 11-7-15. Dutcher 5,973 ft.; Hntn. 7,344 ft.; Wlx. 7,514 ft.; fsg. D.P.

Pontotoc County

L. Walker No. 1 King, SW SE NW Sec. 5-4-7. Drlg. 1,110 ft.

Pottawatomie County

Alma Oil Co. No. 1 Johnson, SW NW SW Sec. 19-6-5. Drlg. 3,100 ft.

F. W. Cooper No. 1 Strawn, SE SE SW Sec. 32-8-5. Drlg. 1,185 ft.

I.T.I.O. No. 1 Lambert, C E½ NW NE Sec. 6-5-2. Drlg.

Sequoyah County

Thompson Brs. No. 1 Ruby, NW NW NE Sec. 30-12-22. Drlg. 1,510 ft.

Seminole County

J. G. Buell No. 1 Madgett, SE SW SE Sec. 15-10-5. Wdfd. 4,495 ft.; Wlx. 4,-802 ft.; T.D. 4,810 ft.; no shows; D. &A.

Flynn et al No. 1 Work, NE SE SE Sec. 19-8-7. Drlg. 630 ft.

Woodson Oil No. 1 Goodrich, NE SW SE Sec. 14-5-5. Drlg. 2,809 ft.

Stephens County

Phillips Pet. Co. No. 1 Culbertson, NW NW SE Sec. 4-1-5w. T.D. 5,620 ft.; F. 178 B.O. 42 gr. in 4 hr.; pot. 1,071 B. O.; comp.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Drlg. 11,583 ft.

John Koberg No. 1-A Harms, C NW NE Sec. 6-10-16w. Drlg. 3,675 ft.

L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. Drlg. 2,220 ft.

SOUTHERN OKLAHOMA

Carter County

Pure Oil Co. No. 1 Noble, NE SE Sec. 35-3s-1e. Arb. 7,930 ft.; S.S.O. 8,333-40 ft.; T.D. 8,500 ft.; W.O.C.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. Drlg. 1,460 ft.

Cotton County

E. N. Castley No. 1 Garrison, NE SW NW Sec. 18-4s-10w. T.D. 1,234 ft.; abd.

Marshall County

Hughes et al No. 1 Vititto, C NE SE Sec. 11-5s-4e. O.W.D.D.; O.T.D. 7,100 ft.; T.D. 7,110 ft.; drlg. by 8-in. 880 ft. to 1,140 ft.; fsg. 7-in.

Tillman County

Paul Helf No. 1 Brisley, NE NE NE Sec. 22-1s-19w. T.D. 3,515 ft.; abd.

Oil Inv. No. 2 Hammell, NE NW NW Sec. 6-5s-15w. O.W.D.D.; O.T.D. 2,829 ft.; drlg. 3,347 ft.

KANSAS

Week Ending May 20 (Descriptions are East unless marked otherwise)

Barton County

Amerada Pet. Corp. No. 1 Dagleman, C NE NE Sec. 23-19-15w. S.S.O. 3,253 ft.; fsg. 3,356 ft.

B. B. & M. No. 1 Dupont, SE SE NE Sec. 21-19-11w. Lans. 2,945 ft.; Arb. 3,295 ft.; T.D. 3,325 ft.; 500 ft. W.I.H.; D. &A.

Crown Pet. No. 1 Koch, NE NE NE Sec. 23-20-12w. Lans. 3,104 ft.; Arb. 3,333 ft.; T.D. 3,358 ft.; 3,000 ft. O.I.H.

R. E. Day et al No. 1 Feltes, SE SE NE Sec. 14-16-12w. O.W.D.D.; S.S.O. 2,954-62 ft.; Lans. 3,069 ft.; C.O. 3,200 ft.

Butler County

Carey & Jennings No. 1 Kelly, C SW Sec. 20-27-4. Set 10-in. 1,111 ft.; C.O.

Elbar Corp. No. 1 Martin, NE SE SE Sec. 34-26-7. C.O. 985 ft.

Simpson Oil Co. No. 1 Evans, CSL SW Sec. 21-28-7. Drlg. 2,690 ft.

Chase County

Alex McCoy No. 1 Berns, SE NW NE Sec. 29-22-6. Lans. 1,985 ft.; K.C. 2,170 ft.; drlg. 2,665 ft.

Cowley County

C. L. Carlock No. 1 Shaffer, SW SE SW Sec. 3-31-4. Drlg. 3,000 ft.

Cities Service No. 1 Pope, SE NE SW Sec. 21-31-3. Drlg. 1,955 ft.

Dickinson County

Franks et al No. 1 Huffman, NW NW SW Sec. 11-13-1, H.F.W.; drlg. 2,640 ft.

Ellis County

Central Pet. No. 4 Hadley, NE NE SE Sec. 12-11-18w. Lans. 3,054 ft.; T.D. 3,162 ft.; cmtg. 7-in. 3,162 ft.

Ellsworth County

Gulf Oil Co. No. 1 Jansen, SW SW SW Sec. 29-17-10w. S.O. 2,984 ft.; Arb. 3,-254-57 ft.; T.D. 3,272 ft.; P. 293 B.O. in 8 hr.; pot. 716 B.O.; comp.

I. W. Murfin No. 1 Loula, NW NW SE Sec. 28-16-10w. Drlg. 280 ft.

Geary County

Scheu & Tague No. 1 Aye, NW SW NW Sec. 10-12-8. 8-in. 1,755 ft.; C.O.

Harvey County

Garden et al No. 1 Lagree, SE SE SE Sec. 4-23-3w. O.W.D.D.; O.T.D. 280 ft.; drlg. 2,530 ft.

Kiowa County

Sinclair Prairie No. 1 Price, NW NW SW Sec. 22-28-20w. T.D. 3,090 ft.; P.B. 2,140 ft.; pipe twisted off; set whpstk. 1,063 ft.; drlg. 2,610 ft.

Leavenworth County

John Hardaway No. 1 Scheller, SW SE SW Sec. 30-10-22. S.D. 3,907 ft.

Mead County

Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,435 ft.

Miami County

Dave Judd No. 1 Waite, CNL SW SE Sec. 4-15-25. Drlg. 140 ft.

Norton County

Power Oil et al No. 1 Van Patten, C NE Sec. 26-4-21w. Lans. 3,325 ft.; Arb. 3,-610 ft.; T.D. 3,665 ft.; shot and rec. 100 ft. O.I.H.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), C NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; drlg. 1,325 ft.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. Miss. 2,835 ft.; Simp. 3,631 ft.; Wlx. 3,675 ft.; U.R. 3,690 ft.

Phillips County

Blue Stem Oil Co. No. 1 Donaldson, SE NE NE Sec. 25-5-18w. Lans. 3,080 ft.; 700 ft. O.I.H.

Rice County

Central Pet. No. 1 Dippel, CNL NE SE Sec. 27-19-10w. W.O.C. 218 ft.

Continental Oil No. 1-B Hamilton, SW SW NE Sec. 19-18-7w. W.O.C. 214 ft.

Gulf Oil No. 1 Barngrover, CWL SW SW Sec. 30-19-9w. Lans. 2,943 ft.; S.O. 3,018-20 ft.; Arb. 3,269-84 ft.; T.D. 3,-284 ft.; P. 441 B.O. in 8 hrs.; pot. 1,-322 B.O.

Gulf Oil No. 1 Linke, CEL NE SE Sec. 36-19-10w. Simp. 3,266 ft.; Arb. 3,280 ft.; R.U.S.T. 3,283 ft.; 1,500 ft. F.I.H.

McPherson Drlg. Co. No. 1 Cramm, SE SE SW Sec. 15-19-9w. Drlg.

Phillips Pet. Co. No. 1 Brandenstein, C SE NW Sec. 35-19-10w. Arb. 3,302 ft.; 5-in. 3,302 ft.

Russell County

Cities Service No. 1 Dutt, NW NW SE Sec. 18-13-14w. Drlg. 2,485 ft.

Saline County

Central States Oil Co. No. 1 Crawford, NW SW NE Sec. 26-13-3w. Lans. 2,130 ft.; Miss. 2,786 ft.; drlg. 3,000 ft.

Shawnee County

W. M. McKnab No. 1 Frits, SW SE NW Sec. 4-12-14. Miss. 1,901 ft.; Hunton 2,380 ft.; drlg. 2,625 ft.; last report.

Sumner County

Burke-Greis No. 1 Seyfert, SE SE SE Sec. 18-34-2. Drlg. 1,562 ft.

Woodson County

H. H. Billerman No. 1 Huston, CSL SW SW Sec. 36-24-13. Arb. 1,900 ft.; H.F.W. 1,933-37 ft.; D.&A.

Roby et al No. 1 Meairs, SW SW NW Sec. 21-25-14. Drlg. 1,230 ft.

C. L. Sheedy No. 1 Long, SE SE SW Sec. 28-26-14. Drlg. 1,280 ft.

MISSOURI

Andrew County

Birkett et al No. 1 Gee, NW NW SE

Sec. 28-60n-35w. T.D. 90 ft.; engine trouble.

Cass County

C. C. Lewis et al No. 1 Chandler, NE cor. Sec. 4-45-33w. Drlg. below 1,325 ft.

Clay County

Eastern Drlg. Co. No. 1 Williams, NW NW NE Sec. 28-53-32w. Drlg.

Frank Hopper et al No. 1 Black, NW NW NW Sec. 36-52-32w. Based Miss. 1,225 ft.; stg. csg. 1,226 ft.

Clinton County

C. E. King et al No. 1 Willis, NW NW NW Sec. 13-55n-32w. Drlg. below 705 ft.

De Kalb County

Geo. W. Moore No. 1 McQuarter, NE SW SW Sec. 11-57n-31w. T.D. 750 ft.; stg. csg.

Hickory County

A. M. Sims No. 1 Wilson, NW NW NW Sec. 3-37n-21w. S.D. 1,596 ft.

Holt County

Brin & Nathan No. 1 Garrett, C NE NE Sec. 2-61n-38w. Loc.

Markham et al No. 1 Gaffney, SW SE SW Sec. 24-63-40w. R.R.

J. H. Everitt et al No. 1 Spring, SW SW SE Sec. 30-62-38w. T.D. 2,440 ft.; prep. mud.

Mercer County

Geo. W. Moore No. 1 Castell, NE NE NE Sec. 32-65-24w. Loc.

Shelby County

Chas. Delfeld No. 1 Turner, C NW NW Sec. 27-59n-9w (wildcat). Drlg. 204 ft.

Sullivan County

H. V. Elwell No. 1 Taylor, CNL S½ S½ Sec. 12-62-21w. Rig.

NEBRASKA

Cass County

Golden Rod Oil Co. No. 1 Sparer, SE SE SE Sec. 8-11-13e. Drlg. below 380 ft.

Hitchcock County

C. L. Price No. 1 Carter, SE NE SW Sec. 35-2n-32w. Lans. 3,976 ft.; S.D. 4,000 ft.; S.O.

Scotts Bluff County

J. A. Fairy Pet. Corp. No. 1 McCully, C SE SE Sec. 35-23n-58w. S.G. 785 ft.; U.R. 6-in. at 1,400 ft.

Albert Wood No. 1 McHenry, SE NE NE Sec. 33-23n-57w. S.D. 600 ft., T.D.

ARKANSAS

Columbia County

Atlantic Ref. Co. No. 1 J. A. Foster, C NW NE Sec. 24-17-20. Spdg.

Atlantic Ref. Co. No. 1-E Garrett, C SE NW Sec. 24-17-20. T.D., ool. L. 7,408 ft.; cg.

Hassie Hunt No. 1 Tally, Sec. 14-17-20. T. Bknr. 7,466 ft.; T.D. 7,587 ft.; rng. Jeep.

Lion Oil Ref. Co. No. 1 Crisp-Glasgow Unit, C NE SE Sec. 23-17-20. Drlg. rd. &gr. sh. 6,619 ft.

Lion Oil Ref. Co. No. 2 Crisp-Glasgow Unit, C NW SE Sec. 23-17-20. Fsg. 7,361 ft.

Lion Oil Ref. Co. No. 1 A. C. Garrett, C SE SE Sec. 13-17-20. Drlg. rd.&gr. sh. 5,447 ft.

Lion Oil Ref. Co. No. 1 Tissue, C SW NW Sec. 15-18-19. R.U.

Phillips Pet. Co. No. 1 Askew Unit, C NE NW Sec. 4-17-21. T. Tr. Pk. 4,620 ft.; T.C.V. 5,920 ft.; cg. 8,055 ft.; no show.

Shell Pet. Corp. No. 1 L. Garrett, C NW SE Sec. 13-17-20. T.D. 7,665 ft.; por. sat. L.; rng. csg.

Shell Pet. Corp. No. 1 Glasgow, C NW NW Sec. 23-17-20. Cg. 7,397 ft., ool. L.

Shell Pet. Corp. No. 2 Glasgow, C SW NW Sec. 23-17-20. Cd. to 7,609 ft.; sat. oil in L.; cd. gas sat. 7,472-7,507 ft.; oil sat. 7,507-7,689 ft.; S.W. 7,689-7,708 ft., T.D.; 5½-in. csg. 7,696 ft.; perfg.

Southwood Oil Co. No. 1 L. A. Grelling, C NE NW Sec. 23-17-20. T.D. 7,489 ft.; D.S. stk.; P.B. 6,720 ft.; circ. with oil; could not pull D.S.; P.B. 2,400 ft.; drld. to 2,770 ft.; lost circ.; P.B. 2,352 ft.; to sdtrk.; drlg. rd.&gr. sh. 5,831 ft.

Standard Oil Co. of La. No. 1-B T. Crumpler, NW cor. NW NW Sec. 15-17-19. Drlg.

Standard Oil Co. of La. No. 1-B E. D. Harris et al, 660 ft. N, 664 ft. W, SE cor. SE NE Sec. 15-17-19. Drlg. sh. 5,914 ft.

Standard Oil Co. of La. No. 2 Phillips, 660 ft. S, 665 ft. W, NE cor. NE NW Sec. 15-17-19. Drlg. sdy. sh. 5,566 ft.

G. H. Vaughn No. 1 D. B. Baker Unit, C SW SW Sec. 14-17-20. Drlg. rd.&gr. sh. 6,711 ft.

Lafayette County

East Texas Ref. Co. and Erwin & Leach No. 1 J. Bell Est., 981 ft. S, 609 ft. E, NW cor. NW Sec. 19-16-23. Set 10¾-in. csg. 104 ft.; T. anhy. 3,245 ft.; cd. 3,375-95 ft.; rec. 2 ft. anhy.; 6-in. bl. sh., 9 ft., 8 in. hd. por.; odor and stain oil; 4-in. sdy. L.; set 5½-in. csg. 3,368 ft.; drld. plug; S.I. for stg.

Standard Oil Co. of La. No. 2 Waters et al, SE cor. NE SW Sec. 7-16-22. Drlg. L. 7,232 ft.

Little River County

C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. Cd. 1,270-80 ft.; sh.& wtr. sd.; reported S.O. 1,365-70 ft.; 1,542-64 ft. sd. and 1,564-74 ft. sdy. L.; cor. T.D. 1,598 ft.; set 7-in. csg. 1,590 ft. (cor.); T.D. 1,598 ft.; drlg. plug.

Lonoke County

J. F. Russell No. 1 J. T. Gunter, 440 ft. N, 577 ft. W, SE cor. Sec. 17-5n-10w. S.D. 2,009 ft.

Nevada County

Berry Asphalt Co. No. 1 Groves Lbr. & Tbr. Co., SE cor. N SW Sec. 4-14-20. Drlg. white sd. 1,925 ft.

Ouachita County

J. E. Crosbie, Inc., No. 2 F. A. Laney, Sec. 36-15-16. T.D. 2,007 ft.; circulating.

Phillips Pet. Co. No. 1 J. D. Reynolds, 330 ft. SE cor. SE NW Sec. 27-15-15. O.W.W.O.; O.T.D. 4,926 ft.; comp. as disc. well, Snow Hill field; perf. csg. 2,732-35½ ft., 2,728-31½ ft., 2,744-47½ ft., and 2,756-60 ft.; est. 2,300 ft. F.I. H., 1% oil; P.B. 2,770 ft.; set cmt. retainer 2,719 ft.; sqzd.; S.D.; W.O. 2,746 ft.

Saline County

A. W. Givens No. 1 Williams, 375 ft. S, 420 ft. E, NW cor. NE NE Sec. 18-3s-15w. R.U.&S.D. 104 ft.

Sevier County

E. M. Jones No. 1-C Murphy Ld. Co., Sec. 24-18-18. Drlg. gr. sh. 4,447 ft.

R. A. McArthur No. 1 Bell Est., SE cor. SE SW Sec. 29-9s-32w. S.D. 20 ft.

Marine Oil Co. No. 7 fee, 330 ft. SE cor. NE NE Sec. 20-18-17. Drlg. 5,650 ft.

Union County—Schuler

Lion Oil Ref. Co. No. 2 F. N. Bank, NW cor. NE Sec. 13-18-18. T. Jones sd. 7,570 ft.; T.D. 7,695 ft.; perf. 7-in. csg. 6,836-43 ft.; S.W.; sqzd. and drld. out cmt. to 7,695 ft.

Lion Oil Ref. Co. No. 3 F. N. Bank, C S½ SW SE Sec. 12-18-18. Drlg. 7,665 ft.

Phillips Pet. Co. No. 1 Mill, NW cor. S½ Lot 4, SW Sec. 18-18-17. Drlg. 2,120 ft.

Union County—Other

S. S. Alexander No. 1 J. P. Pickering, C NW NW SW Sec. 31-16-15. Drlg. 1,410 ft.

Bob Miam No. 1 Primm Est., SE cor. Lot 5, NE Sec. 1-16-16. Drlg. 614 ft.

Oliphant Oil Co. No. 1 Union Sawmill Co., C SW NW Sec. 22-19-14. Cd. 2,492-2,512 ft.; rec. 1 ft. 6 in. tight gr. sd.; set 9⅝-in. csg. 3,184 ft.; T. C.V. 5,405 ft.; drlg. rd. sd. 7,708 ft.

Sam Sebersky et al No. 2 J. N. Jerry, 100 ft. SW of No. 1, Sec. 21-17-14. Oil and S.W. 2,687-98 ft.; set 6-in. csg. 2,691 ft.; T.D. 2,698 ft.; swbg. S.W. and S.S.O. 2,698 ft.

FLORIDA

Monroe County

Peninsular O. & R. Co. No. 1 J. W. Cory, Sec. 6-55s-34e. Cg. L. 9,028 ft.

Levy County

Florida Oil Discovery No. 2 Cedar Key Co., Sec. 9-15s-13e. Drlg. sh. 4,837 ft.

Nassau County

St. Mary Oil Corp. No. 1 Hillard, Sec. 19-4n-24e. Set 6⅝-in. csg. 3,935 ft.; drlg. sd. 4,580 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark. La. Gas Co. No. 2 Gayoso, 660 ft. SW cor. SE Sec. 14-16-10. T. Tr. Pk. 5,432 ft.; D.S.T. 5,796-5,805 ft. tstd. dry in 26 min.; set 8⅝-in. csg. 6,300 ft.; drlg. hd. sh.&L. 8,315 ft.

Ark. La. Gas Co. No. 1 Thomas, NW cor. Sec. 13-16-10. Set 10¾-in. csg. 1,235 ft.; W.O.C.

Ark. La. Gas Co. No. 1-B Thomas et al, SE cor. Sec. 15-16-10. R.U.

Union Prod. Co. No. 1 Bienville Sch. Bd., 1,056 ft. S, 875 ft. W, NE cor. Sec. 16-16-10. T. Pett. L. 5,123 ft.; T.D. 5,233 ft.; set 5-in. csg. 5,226 ft.; W.O.C.

Bossier Parish

Harry Hanbury No. 1 Leonard, 660 ft. NE cor. Sec. 19-19-13. Set 16-in. csg. 127 ft.; set 10-in. csg. 1,391 ft.; drlg. anhy. 4,253 ft.

Caddo Parish

R. E. Allison No. 9 Ellerbe, Sec. 26-18-14. Set surf. csg. 2,240 ft.; por. L. 5,546-60 ft.; set 5½-in. csg. at T.D. 5,560 ft.

Bachelor, Adams & Birdwell No. 2 Van Horn, SW cor. Sec. 22-22-16. S.D. 1,125 ft.; wtr.

Ballow & Williams No. 1 Crystal fee, SE cor. NE SW Sec. 24-21-16. Set 6-in. csg. 975 ft.; W.O.S.R. 981 ft.

T. L. Benson No. 1 Ark. Fuel, NW cor. SE SW Sec. 25-21-15. Drlg. sh. 1,310 ft.

W. F. Bridewell et al No. 1 Huckaby Est., SW cor. NW Sec. 19-22-15. Drlg. sdy. L. 2,450 ft.

Mose Browning et al No. 2 Browning, SE cor. Sec. 21-22-16. Drlg. sdy. sh. 2,425 ft.

Carney et al No. 3 Hart, SE NW Sec. 21-21-16. T.D. 2,423 ft.; tstd. S.W. 2,423 ft.; P.B. 2,380 ft.; W.O.C.

Cryer & Davis No. 2 Crystal fee, Sec. 25-21-16. R.U.

Drillers, Inc., No. 1 Ellerbe, SW cor. Sec. 23-18-14. Set 5½-in. csg. 5,554 ft.; tstg. 5,560 ft.

J. T. Driscoll No. 1 Woolworth, SE cor. Sec. 26-20-15. Set 9⅝-in. csg. 1,370 ft.; cg. cap rk. 5,562 ft.

East Texas Ref. Co. No. 2 Williams, SE cor. NE Sec. 5-23-15. Set 5½-in. csg. 6,130 ft.; W.O.C.

East Tex. Ref. Co. No. 1 U. S. Govt., NW cor. NW SE Sec. 5-23-15. Drlg. anhy. 5,653 ft.

M. M. Ferrell No. 1 Satterwhite, SE NW Sec. 10-20-16. Set 6-in. csg. 1,335 ft.; tstd. S.W.; S.O. 1,580 ft.; acdzd. with 3,000 gal.; tstd. S.W.; S.O.; S.D. 2,010 ft.; rig rep.

Harry Fotiades No. 1 Brown, 880 ft. N, 115 ft. W, C Sec. 35-18-14. Set 9⅝-in. csg. 1,505 ft.; drlg. sh.&L. 5,060 ft.

Hamilton & Stone No. 1 Atlanta, 500 ft. S, 244 ft. W, NE cor. NW Sec. 2-20-16. Drlg. sh. 450 ft.

Harry Hanbury No. 1 De Soto Corp. (formerly W. R. Nicholson Oil Co.), NW cor. Sec. 26-18-14. O.W.D.D.; O.T.D. 5,563 ft.; set whpstk. 3,951 ft.; T.D. 4,000 ft.; W.O.C.

C. C. Lowery No. 1 Ledbetter, Sec. 7-20-15. R.U.

F. W. Martin Drlg. Co. No. 7 Bailey, SE cor. frac. Sec. 29-22-16. Cg. 2,447 ft.

Midfield Oil Co. No. 1-B Muslow, 330 ft. N, 400 ft. W, C Sec. 6-20-15. T.D. 2,256 ft.; set 5½-in. csg. 2,206 ft.

Oblinger & Ritter No. 2 Boisseau, SE cor. Sec. 34-21-16. Set 6-in. csg. 971 ft.; T.D. 977 ft.; pmpd. S.W.; P.B. 971 ft.; W.O.C.

Red Iron Drlg. Co. No. 1 Model Gardens Unit, SE cor. Sec. 23-18-14. Slight porosity 5,556-59 ft. and 5,564-69 ft.; set csg.; swbd. dry and ripped csg. 5,549-74 ft.; used 5,000 gal. acd.; swbg. to test 5,584 ft.

Skidmore-O'Mara, Inc., No. 1 Muslow, O.W.W.O., SW Sec. 31-21-15. S.D. 1,000 ft.

Joe Straughn No. 1 Hart, 430 ft. N, 330 ft. E, SW cor. Sec. 29-21-16. Set 6-in. csg. 2,220 ft.; tstd. dry; fsg. 2,398 ft.; W.O.S.R.

Joe Straughn No. 1 Stiles, SW cor. Sec. 29-21-16. Drlg. sh. 400 ft.

Caldwell Parish

Critchett & Woods (formerly E. T. Oakes) No. 1 Kyles, NE cor. SW NE Sec. 18-11-3e. S.D. 1,503 ft.; rig rep.

Claiborne Parish

Maritsky & Bibby No. 3 McClung, SW Sec. 29-21-7. Set 10-in. csg. 90 ft.

De Soto Parish

Atlantic Ref. Co. and Seaboard Oil Corp. No. 1 Frank Grocery Co., NW Sec. 35-12-11. Set 8-in. csg. 101 ft.

Daniel Murray No. 1 Russell, 50 ft. N, 500 ft. W, SE cor. NE NW Sec. 12-11-16. O.W.D.D.; O.T.D. 2,046 ft.; R.U.; to D.D.

La Salle Parish

Snow Black Oil Co. No. 1 Pendarvis, 250 ft. NE cor. SW SE Sec. 21-10-1e. S.D. 1,350 ft.

Snow Black Oil Co. No. 2 Tullos, SW cor. SE Sec. 23-10-1e. R.U.

G. W. Ziegen No. 16 La. Cent. Lbr. Co., SW cor. Sec. 24-11-2e. T. Wlx. 1,619 ft.; S.W.; S.D.; W.O. 1,690 ft.

Natchitoches Parish

Jack Lent et al No. 1 Whatley, SW cor. Sec. 17-10-10. S.O.&G. reported at 1,490-1,516 ft.; D.S.T. 3,282-96 ft.; tstd. 100 ft. mud cut with 40-grv. oil; P.B. 3,300 ft.; set 6⅝-in. csg. 3,282 ft.; bld. down 600 ft. of bttm.; S.S.O.; ran 2-in. tbg. and lnr. and tstd. S.O.&S.W.; T. tbg. and lnr. and tstd. S.O.&S.W.; pmpd. S.O. and much S.W.; pmpd. off approx. 10 B.O.; did not shoot with nitro; bailing; S.O.&wtr.; T.D. 330 ft.; S.D.; W.O.

Sabine Parish

Geo. Ellis No. 1 Walker, 500 ft. NW cor. NW SE Sec. 8-4-12. Set 12½-in. csg. 276 ft.; reported S.O. 2,180 ft. and 2,263-65 ft.; rng. csg. 2,269 ft.; cd. sdy. sh. 2,265-69 ft.; set 7-in. csg. 2,250 ft.; drld. plug; T.D. 2,271 ft.; tstd. S.W.; W.O.

Putter et al No. 1 Ebarb, NE cor. SE Sec. 4-7-13. Set 6-in. csg. 2,038 ft.

W. M. Quick No. 1 Sabine, SE cor. NE NE Sec. 8-7-13. Drlg. 40 ft.

Sklar & Major Oil Co. No. 1 Sabine, 440 ft. S, 990 ft. W, NE cor. SE NE Sec. 7-7-11. T.D. 2,418 ft.; tstd. S.W.; W.O.

C. H. Smith Sabine Lbr. Co., NE cor. NW NW Sec. 9-7-13. Rng. 7-in. csg.; tstd. S.W. in 2-ft. sd. 2,472-74 ft.; P.B. 2,030 ft.; W.O.C.

H. M. Sneed No. 1 Leone, SW cor. NW SE Sec. 8-7-13. Drlg. sh. 1,954 ft.

Jeff Spier No. 1 Remedes, SE cor. NW NW Sec. 12-7-13. Set 6-in. csg. 2,168 ft. W.O.S.R.

Sutton Zwolle Oil Co. No. 3 Bowman Hicks, 330 ft. SW cor. SW NW Sec. 18-7-13. Tstd. S.W. with S.O. 2,282 ft.; drlg. ch. rk. 2,365 ft.

Union Parish

Standard Oil Co. of La. and Joe Modisett No. 1-B Frost Lbr. Ind., Sec. 14-23n-2w. Cd. 6,910-24 ft.; rec. 12½ ft. sd. and strks. sh.; no show; set 9⅝-in. csg. 4,508 ft.; cd. 7,008-16 ft., hd. sd. &sh.; hd. sdy. L. to 7,084 ft.; cd. 7,128 ft.; cross bedded gr. shly. sd.; drlg. rd. &gr. sh. 7,785 ft.

Webster Parish

Hunt Oil Co. No. 30 Hope, 100 ft. W, C NE SW Sec. 30-21-10. Spdg.

Hunt Oil Co. and Magnolia Pet. Co. No. 1 Gray-Cox, SW cor. Sec. 19-21-9. Drlg. sh.&L. 5,624 ft.

Hunt Oil Co. No. 1 Miller, 100 ft. N, C NW NE Sec. 4-20-10. Drlg. sdy. sh. 8,076 ft.

Hunt Oil Co. No. 1 Stewart, NW SE Sec. 32-21-10. Set 9⅝-in. 5,672 ft.; drlg. sh. 6,727 ft.

Magnolia Pet. Co. No. 1 Roseberry Unit, 20 ft. N and W, C SE Sec. 29-23-9. Used 750 gal. acd. and flwd. and swbd. 83 B.P.D.; T.D. 9,250 ft.; O.T.D. 9,380 ft.; flwd. 31 bbls. in 5½ hrs.; 3 heads; through 1-in. ck.; pulled 2½-in. tbg. and ran 2-in. tbg.; flwd. 50 B.P.D. by heads; went in to shoot with 65 qts. nitro at 9,250 ft.; went off at 8,350 ft.; C.O. hole; T.D. 9,250 ft.; P.B. 8,318 ft. and perf. Bodcw. sd. 8,292-8,305 ft.; tstd. S.W.; W.O.

Ohio Oil Co. No. 5 Bodcaw, Acct. 4, 760 ft. S, 600 ft. E, C Sec. 13-21-10. Well killed to recomp.; D.D. to 8,357 ft.; set 7-in. csg. 8,292 ft.; W.O.C.

Oliphant Oil Co. No. 2-A Stewart et al, SW cor. Sec. 33-21-10. Drlg. sdy. sh. 8,166 ft.

Union Prod. Co. No. 1 Walker Unit, 50 ft. S, C SE Sec. 30-18-8. Set 9⅝-in. csg. 6,490 ft.; T. Pettit 6,665 ft.; T. Tr. Pk. 6,910 ft.; drlg. rd. sd.&sh. 9,852 ft.

Woodley Pet. Co. No. 1-B R. R. Cox, 660 ft. SW cor. Sec. 23-21-10. O.W.D.D.; O.T.D. 4,695 ft.; drlg. sh.&L. 5,426 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Alfred Boudoin, Sec. 58-12s-3e. Drlg.

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drlg.

Continental Oil Co. No. 1 Lucion Duhon, Sec. 17-12s-3e. Drlg. sh. 10,200 ft.

Stanolind O. & G. Co. No. 1 Blanchet, Sec. 67-12s-3e. Drlg. sh. 5,119 ft.

Bancroft—Beauregard Parish

Republic Prod. Co. No. 8 Columbia Ld. & Tbr. Co., Sec. 15-6s-13w. R.U.R.

Republic Prod. Co. No. 7 Columbia Ld. & Tbr. Co., Sec. 15-6s-13w. T.S. 7,321 ft.; T.D. 7,334 ft.; 7-in. csg. 7,326 ft.; I.P. 300 B.P.D.; ¼-in. ck.

Republic Prod. Co. No. 4 Lutcher Moore Lbr. Co., Sec. 16-6s-13w. W.O. rig.

Republic Prod. Co. No. 6 Lutcher Moore Lbr. Co., Sec. 15-6s-13w. Cg. 7,195 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. 13⅜-in. csg. 1,700 ft.; T.D. 9,453 ft.; sdtrkd. 6,880 ft.; drld. into old hole; P.B. 6,580 ft.

Texas Co. No. 2 Wax Bayou Co., Sec. 21-16s-12e. Drlg. sd. 10,870 ft.

Baton Rouge—East Baton Rouge Parish

Guaranty Oil Co. No. 1 D. J. Morgan. 9⅝-in. csg. 1,169 ft.; T.D. 3,708 ft.; P. B. to 2,065 ft. to strghtn. hole; sdtrkd.; T.D. 7,636 ft.; abd.

Geo. Helis et al No. 1 McInnis, Sec. 36-8s-1w. T.D. 8,192 ft.; abd.

Lisbon-Iberia Oil Co. No. 1 D. A. Duplanter, Sec. 66-7s-1w. T.D. 6,472 ft.; 7-in. csg. 6,452 ft.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 3-B State-Bay, Sec. 13-22s-17e. Drlg. sh. 6,500 ft.

Texas Co. No. 19 State-Bay St. Elaine, Sec. 18-22s-18e. Loc.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 11 Wilberts, Sec. 67-9s-11e. Loc.

Bayou des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 4 St. Charles Ld. Co., Sec. 13-15s-2e. Loc.

De Large—Terrebonne Parish

Fohs Oil Co. No. 1 Buckley-Mahler, Sec. 25-19s-16e. 13⅜-in. csg. 3,380 ft.; T.D. 10,211 ft.; run 9⅝-in. csg.

Caillou Island—Terrebonne Parish

Texas Co. No. 1-B State-Caillou Island, Sec. 19-23s-20e. Drlg. sd. 5,387 ft.

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. T.D. 2,465 ft.; 13⅜ in. csg. 2,465 ft.; T.D. 6,564 ft.; P.B. sdtrkd.; T. salt 8,059 ft.; T.D. 8,002 ft.; P.B. to 2,485 ft.; sdtrkd.; drlg. sh. 5,368 ft.

Magnolia Pet. Co. No. 24 Cameron Meadows Ld. Co., Sec. 21-14s-13w. Drlg. sh. 1,285 ft.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 4 Delbert Stark and Brown Cypress Co., Sec. 70-15s-15e. T.D. 7,794 ft.; P.B. 6,764 ft.; sdtrkd.; T.D. 8,268 ft.; stk. D.S.; shot at 8,195 ft.; P.B. 7,642 ft.; sdtrkd. 7,642 ft.; T.D. 8,260 ft.; 9⅝-in. csg. 8,200 ft.; T.D. 8,292 ft.; cleaned hole; found csg. collapsed; recmtd. csg.; rmg. 7,176 ft.; found leak in csg.; recmtd.; W.O.C.

Sun Oil Co. No. 1 Dodge, Sundberry & Latham, Sec. 65-15s-15e. Drlg. sh. 2,726 ft.

Chalkley Field—Cameron Parish

Humble O. & R. Co. No. 2 Sweet Lake Ld. & Oil Co., Sec. 8-12s-6w. Drlg. sh. 7,290 ft.

Shell Pet. Corp. No. 1-A Katherine Bel Hanzen, Sec. 15-12s-6w. Drlg. sh. 9,298 ft.

Charenton—St. Mary Parish

Commerce Oil Co. No. 1 T. Brulation, Sec. 19-13s-10e. Drlg. sh. 6,940 ft.

Pan American Prod. Co. No. 1 Achee, Sec. 21-13s-9e. Loc.

Pan American Prod. Co. No. 13 Laws Realty Co., Sec. 30-13s-10e. T.D. 7,212 ft.; run 5½-in. csg.

Pan American Prod. Co. No. 14 Laws Realty Co., Sec. 30-13s-10e. T.D. 7,405 ft.; P.B. 6,950 ft.

Pan American Prod. Co. No. 5 South Coast, Sec. 30-13s-10e. Drlg. sh. 3,430 ft.

Pan American Prod. Co. No. 13 Veeder, Sec. 30-13s-10e. T.D. 2,587 ft.; 7-in. csg. 2,580 ft.

Pan American Prod. Co. No. 14 Veeder, Sec. 11-13s-9e. Drlg. sh. 1,600 ft.

Cheneyville—Rapides Parish

Texas Canadian Oil Co. No. 1 Myrtle B Pope, Sec. 4-1s-2e. T.D. 7,065 ft.; 5½-in. csg. 5,816 ft.; perf. csg. 5,745-68½ ft.; I.P. 388 B.P.D.; 12/64-in. ck.

Convent—St. James Parish

Continental Oil Co. No. 2 Realty Operators, Inc., Sec. 16, 13¾-in. csg. 1,492 ft.; T.D. 7,889 ft.; P.B. 7,275 ft.; sdtrkd. 7,305 ft.; T.D. 8,235 ft.; well blew out; caught fire; cleaned hole to 4,866 ft.; P.B. 2,502 ft.; sdtrkd.; drlg. sd.&sh. 7,419 ft.

Creole—Cameron Parish

Superior Oil Co. No. 6 State-Gulf of Mexico. T.D. 5,986 ft.; P.B.; sdtrkd.; T.D. 7,200 ft.; P.B.; sdtrkd. 1,175 ft.; drlg. sh. 2,952 ft.

Darrow—Ascension Parish

Humble O. & R. Co. No. 21 Community, Sec. 31-10s-2e. T.D. 6,415 ft.; 5½-in. csg. 6,404 ft.; swbd. S.W.; pulling screen.

Humble O. & R. Co. No. 22 Community, Sec. 32-10s-2e. Loc.

Humble O. & R. Co. No. 5 Landry, Sec. 34-10s-2e. Drk.

Kiva Oil Co. No. 1 Duplessis, Sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 9 State, Sec. 5-22s-16e. Cg. 7,110 ft.

Eola—Avoyelles Parish

Amerada Pet. Corp. No. 1 Mrs. C. B. Machine, Sec. 6-2s-3e. Drlg. sh. 7,045 ft.

Amerada Pet. Corp. No. 2 Mrs. C. B. Machine, Sec. 6-2s-3e. Road comp.

Gulf Expln. Co. No. 1 Samuel Haas Est., Sec. 8-2s-3e. Drlg. sh. 6,480 ft.

Sid Richardson No. 4 Haas Inv. Co., Sec. 7-2s-3e. T.D. 8,624 ft.; perf. csg. 8,496-8,570 ft.; tstd. S.W.; sqzd. perf.; W.O.C. P.B. 8,525 ft.; perf. csg. 8,496-8,525 ft.; I.P. 460 B.P.D.; ¼-in. ck.

Sid Richardson No. 5 Haas Inv. Co., Sec. 5-2s-3e. Drk.

Sid Richardson No. 1 S. S. Pierce, Sec. 6-2s-3e. Drk.

Sid Richardson No. 1 State Bayou, Sec. 7-7s-2e. T.D. 8,120 ft.; fsg.

Sid Richardson No. 2 State Bayou Boenf, Sec. 7-2s-3e. Drive piling.

Sun Oil Co. No. 1 E. A. Townsend, Sec. 8-2s-2e. Reported to cut 110-ft. fault at 3,950 ft.; T.D. 8,568 ft.; 7-in. csg. 8,568 ft.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. T.D. 12,125 ft.; set 1,926 ft. of 5-in. csg.; set screen and lnr. hung tbg. at 9,853 ft.; pulled tbg.; drld. out to 9,784 ft.; P.B. 9,616 ft.; perf. csg. 9,602-10 ft.; tstd. dry; P.B. 8,624 ft.; reperf. csg. 8,610-20 ft.; rec. mud. and S.W.; abd.

Garden Island—Plaquemines Parish

Texas Co. No. 33 State, Sec. 38-23s-33e. 16-in. csg. 551 ft.; T.D. 6,884 ft.; 7-in. csg. 6,711 ft.; perf. csg. 6,580-6,630 ft.; I.P. 475 B.P.D.; ⅞-in. ck.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 3 R.E.K., Sec. 40-17s-15e. T.D. 10,200 ft.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 8 Kaufman, Sec. 7-9s-8w. T.D. 7,956 ft.; sdtrkd.; T.D. 6,957 ft.; 5-in. csg. 6,949 ft.; drld. out 6,957 ft.; swbd. oil; well went dead; swbg.

Golden Meadows—La Fourche Parish

M. H. Marr and G. H. Vaughn No. 1 B. & D. Unit, Sec. 12-19s-22e. R.U.

Martex Pet. Corp. No. 1 Falgout Holding Co., Inc., Sec. 9-19s-22e. Cd. sh.& sd.; O.S. 2,636-45 ft. and oil sd. 2,645-54 ft.; drlg. sh. 7,295 ft.; rec. 36 stands 42-gr. oil; D.S.T. 7,121-7,202 ft. cd. oil sd. 7,919-64 ft.; cd. S.W. sd. 7,-965 ft.; run 7-in. csg.; T.D. 8,524 ft. (corrected); 7-in. csg. 8,524 ft.; perf. csg. 8,163-75 ft.; dropped tbg. in hole; fsg.; P.B. 7,975 ft.; perf. csg. 7,925-55 ft.; 120 holes; I.P. 250 B.P.D.; ¾-in. ck.; gr. 39.5.

Martex Pet. Corp. No. 2 Falgout Holding Co., Sec. 9-19s-22e. Loc.

Grand Bay—Plaquemines Parish

Gulf Oil Corp. No. 4 Grand Prairie Lve. Dist., Sec. 48-20s-18e. Drlg. sdy. sh. 8,399 ft.

Gulf Oil Corp. No. 2 State, Sec. 6-20s-19e. Cg. sh. 8,374 ft.

Hackberry—Cameron Parish

Gulf Oil Corp. No. 25-A Erwin, Sec. 13-12s-10w. Drk.

Stanolind O. & G. Co. No. 28-A Gulf fee, Sec. 30-12s-10w. Drlg. sh. 1,913 ft.

Superior Oil Co. No. 1 Kaough, Sec. 31-12s-10w. Drlg. sd. 7,531 ft.

Texas Co. No. 25-B State, Twp. 12s-9w. T. salt 7,440 ft.; T.D. 7,445 ft.; abd.

Texas Co. No. 26 State, 12s-9w, Loc.

Texas Co. No. 26-B State, Twp. 12s-9w. Driving piling.

Union Sulphur Co. No. 8 Caldwell, Sec. 37-2s-10w. Drlg. sh. 6,562 ft.

Union Sulphur Co. No. 12 Doiron, Sec. 37-12s-10w. T.D. 8,064 ft.; fsg.

Union Sulphur Co. No. 13 Doiron, Sec. 27-12s-10w. S.D. 5,221 ft.

Union Sulphur Co. No. 1 Josephine O'Quinn, Sec. 37-12s-10w. T.D. 6,927 ft.; sdtrkd.; T.D. 8,014 ft.; 7-in. csg. 8,014 ft.

Horseshoe Bayou

Texas Co. No. 2 St. Mary Parish Ld. Co., Sec. 37-17s-9e. Drlg. sh. 1,896 ft.

Jefferson Island—Iberia Parish

Phillips Pet. Co. No. 1 Breaux, Sec. 41-12s-5e. Drlg. sh. 2,175 ft.

Texas Co. No. 2 Jefferson Island, Sec. 58-12-5e. 18⅝-in. csg. 40 ft.; 7⅝-in. csg. 8,451 ft.; T. salt 9,444 ft.; T.D. 9,458 ft.; perf. csg. 8,682-92 ft.; making 90 bbls. net oil, 227 bbls. S.W.; ½-in. ck.; P.B. 8,700 ft.; perf. csg. 8,-682-92 ft.; made sqze. job.

Texas Co. No. 2 State-Lake Peigneur, Twp. 12s-5w. T. salt 7,419 ft.; T.D. 7,-437 ft.; P.B. 6,292 ft.; P.B. and sidetracked; drlg. sh. 6,420 ft.

Jennings—Acadia Parish

Glassell & Glassell No. 7 McFarlain, Sec. 41-9s-2w. Drlg. sh. 8,475 ft.

Gulf Oil Corp. No. 41 Arnaudet, Sec. 47-9s-2w. 9⅝-in. csg. 4,557 ft.; drlg. sh. 5,020 ft.

Shell Pet. Corp. No. 6 Conover, Sec. 40-17s-15e. P.B. 7,200 ft.

Stanolind O. & G. Co. No. 114 Crowley Oil & Mineral Co., Sec. 48-9s-2w. T.D. 3,755 ft.; P.B. 1,293 ft.; P.B. 1,900 ft.; W.O.C.

Lafitte—Jefferson Parish

Texas Co. No. 2 Sch. Bd., Sec. 20-17s-24e. T.D. 6,601 ft.; sdtrkd. 6,375 ft.; went back into old hole; trying to sdtrk. at 6,387 ft.; drlg. sh. 7,994 ft.

Texas Co. No. 2 State-Bayou Norman, Sec. 21-17s-24e. 10¾-in. csg. 1,942 ft. drlg. sh.&L. 8,124 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 43 State, Sec. 30-21s-20e. T.D. 4,122 ft.; P.B.; sdtrkd.; drlg. sdy. sh. 3,906 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 10 La Fourche Basin Levee Dist., Sec. 2-18s-25e. M.I.R.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 8 State, Sec. 17s-19e. T.D. 9,600 ft.; P.B. 9,034 ft.; sdtrkd. at 9,034 ft.; drlg. sh. 9,876 ft.

Lake Mongoulois—St. Martin Parish

Texas Co. No. 7 State, Sec. 10-10s-9e. Drlg. sh. 1,812 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 24 State, Sec. 18-23s-18e. T.D. 5,949 ft.; 7-in. csg. 5,790 ft.; perf. csg. 5,045-5,140 ft.; I.P. 129 B.P.D.; ⅞-in. ck.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 W. E. Mont, Sec. 32-19s-19e. Loc.

Humble O. & R. Co. No. 1 C. P. Smith, Sec. 53-19s-19e. T.D. 9,986 ft.; rmg.

Humble O. & R. Co. No. 2 La Terre Ld. Co., Sec. 32-19s-19e. Loc.

New Iberia—Iberia Parish

Lisbon-Iberia Oil Corp. No. 7 Gulf fee, Sec. 25-12s-7e. T.D. 5,939 ft.; P.B.; sdtrkd.; T.D. 6,019 ft.; P.B. 3,738 ft.; W.O.C.

Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co. No. 9 J. P. Duhe, Sec. 26-12s-7e. T.D. 3,789 ft.; 7-in. csg. 3,788 ft.; P.B. 3,756 ft.; perf. csg. 3,713-53 ft.; tstg.; I.P. 157 B.P.D.; ¼-in. ck.

Texas Co. No. 2-A Hanzon, Sec. 54-12s-7e. 7⅝-in. csg. 8,075 ft.; S.D. 8,801 ft.; heaving sh.; P.B. 8,065 ft.; P.B. to sidetrack 7,071 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 4 Davis, Sec. 45-8s-1e. Drlg. L. 8,088 ft.

Humble O. & R. Co. No. 4 H. J. Habetz, Sec. 45-8s-1e. Loc.

North Tepetate—Acadia Parish

St. Mary Oil Co. No. 1 Dr. H. Jenkins, Sec. 12-7s-2w. Drk.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 3 Haas & Hirsch, Sec. 4-6s-5e. Loc.

Smith & McDannald No. 1 S. W. Futral, Sec. 20-6s-5e. R.U.

Y. D. Spill No. 1 Gaudet, Sec. 4-6s-5e. S.D. 4,700 ft.

Western Gulf Prod. Co. No. 1 Watkins, Sec. 4-6s-5e. R.U.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 39 Orleans Lve. Bd., Sec. 13-8s-15e. 16-in. csg. 244 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 10 State QQ, Sec. 17-19s-17e. Drlg. sh. 2,575 ft.

Gulf Oil Corp. No. 3-A Orleans Lve. Bd., Sec. 7-19s-17e. Drlg. sdy. sh. 6,850 ft.

Gulf Oil Corp. No. 2-A Plaquemines Ld. Co., Sec. 7-19s-17e. 13⅜-in. csg. 1,524 ft.; drlg. sdy. sh. 7,525 ft.

Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.

Gulf Oil Corp. No. 9 State QQ, Sec. 18-19s-17e. Loc.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec 34-15s-19e 18⅝-in. 11,312 ft.; T.A.

Amerada Pet. Corp. No. 4 South Coast Corp., Sec. 34-15s-19e. 18⅝-in. csg. 239 ft.; drlg. sh. 9,254 ft.

Tide Water Asso. Oil Co. No. 2-A South Coast Corp., Sec. 34-15s-19e. Cg. sh. 10,154 ft.

Roanoke—Jeff Davis Parish

Humble O. & R. Co. No. 6 J. W. Devilbiss, Sec. 14-9s-4w. Cd. at 4,195-98½ ft.; T.D. 4,238 ft.; 7-in. csg. 4,237 ft.; perf. csg. 4,192-4,200 ft.

Sorrento—Ascension Parish

Sorrento Synd. No. 1 L. L. Bernard, Sec. 27-10s-4e. R.U.

South Houma—Terrebonne Parish

Shell Pet. Corp. No. 3 Peters. Drlg. sh. 8,254 ft.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Calcasieu Natl. Bnk., Sec. 36-10s-4w. Drlg. sh. 8,175 ft.

Valentine—La Fourche Parish

T. G. Markley and Mohawk Oil Corp. No. 1 Deusson Hrs., Sec. 100-17s-20e. Drlg. sd.&sh. 6,734 ft.

Pan American Prod. Co. No. 20 Harang, Sec. 8-17s-20e. T.D. 4,608 ft.; D.S. stk.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 5 Buras Lv. Bd., Sec. 23-21s-30e. Drlg. sh. 1,127 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 2 Fontenot-Ladeau, Sec. 45-3s-2e. Drlg. sh. 7,591 ft.

Continental Oil Co. No. 3 Haas, Sec. 44-3s-2e. Drlg. sh. 10,200 ft.

Continental Oil Co. No. 3 Ludeau-Haas, Sec. 44-3s-2e. R.U.

Continental Oil Co. No. 2 Orise Deville, Sec. 46-3s-2e. Drk.

Continental Oil Co. No. 3 Orise Deville, Sec. 46-3s-2e. Drk.

Continental Oil Co. No. 4 Pierre McDaniel, Sec. 45-3s-2e. T.D. 9,082 ft.; I. P. 251 bbl. 14 hr.; ⅞-in. ck.

Continental Oil Co. Sec. 44-3s-2e. Loc.

Continental Oil Co. No. 3 Ed Tate, Sec. 45-3s-2e. T.D. 8,971 ft.; I.P. 280 B.P.D.; ⅞-in. ck.

Texas Co. No. 3 Marman fee, Sec. 45-3-2e. T.D. 9,047 ft.; tstd. oil and S.W.; fsg.

Vinton—Calcasieu Parish

R. & R. Oil Co. No. 2 Vincent, Sec. 34-10s-12w. T.D. 2,343 ft.; run 7-in. csg.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 5 Calcasieu Natl. Bnk., Sec. 12-9s-6w. R.U.

Union Sulphur Co. No. 1 Raymond Hebert, Sec. 6-9s-5w. Drk.

Union Sulphur Co. No. 1 M. F. Johnson, Sec. 12-9s-6w. Drlg. sd.&sh. 5,882 ft.

Union Sulphur Co. No. 3 Mrs. O'Millet, Sec. 7-9s-5w. Drk.

Union Sulphur Co. No. 2 Osmon, Sec. 7-9s-5w. T.D. 9,111 ft.; P.B. 5,910 ft., sdtrkd.; cg. 9,293 ft.

S. LOUISIANA WILDCATS

Acadia Parish

T. G. Markley No. 1 M. L. Vincent, Sec 19-17s-1w. 10¾-in. csg. 1,416 ft.; drlg to Portego sd. 8,060 ft.; showed S.W.; cd. brkn. sd. S.O. odor 8,451-57 ft.; T.D. 9,040 ft.; abd.

T. T. Tolson et al No. 1 J. Turner, Sec 25-7s-1e. R.U.

Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. M.I. rig.

Allen Parish

Bel Oil Corp. No. 1 J. A. Bel, Sec. 22-6s-3w. Cd. gas sd. 6,257-87 ft.; S.W. sd. 6,287-97 ft.; T.D. 9,010 ft.; run 7-in. csg. 8,595 ft.; perf. csg. 8,549-52 ft.; tstd. 40 lbs. press.; rec. 18 stands S. W., drlg. mud cut with gas and dist. perf. csg. 6,917-19 ft.; tstd. S.W.; P.B. 6,004 ft.

Assumption Parish

Shell Oil Co. No. 1 Ellis, Sec. 66-16s-14e. Drlg. 5,600 ft.

Beauregard Parish

Atlantic Ref. Co. No. 1 Lutcher Moore, Sec. 22-3s-11w. Loc.

Atlantic Ref. Co. No. 1 Rice Ld. & Lbr. Co., Sec. 22-3s-11w. Loc.

Atlantic Ref. Co. No. 1-A Rice Ld. & Lbr. Co., Sec. 22-3s-11w. T.D. 4,561 ft.; cmtd. bttm. of hole; W.O.C.

Standard Oil Co. of Calif. No. 1 Long Bell Lbr. Co., Sec. 23-4s-9w. Drlg. sdy. sh.&L. 6,345 ft.

Calcasieu Parish

Humble O. & R. Co. No. 1 Edgewood Ld. & Logging Co., Sec. 32-7s-10w. Spd.

David B. MacDaniel No. 2 Sch. Ld., Sec. 16-9s-7w. 15½-in. csg. 46 ft.; 10¾-in. csg. 1,299 ft.; T.D. 7,890 ft.; S.D.; abd.

Union Sulphur Co. No. 2 Drew Manuel Training Sch., Sec. 17-10s-11w. R.U.

Cameron Parish

Union Sulphur Co. No. 1 Sweet Lake Ld. Co., Sec. 9-12s-7w. Drlg. sh.&L. 8,735 ft.

East Baton Rouge Parish

Danciger O. & R. Co. No. 1 D. E. McInnis, Sec. 58-7s-1e. Bldg. road.

Gulf States Expl. Co. No. 1 Greater University Lds., Sec. 48-7s-1e. T.D. 7,636 ft.; abd.

Evangeline Parish

Continental Oil Co. et al No. 1 Mrs. Lillie Manuel, Sec. 33-4s-1w. T. Vicksburg 7,740 ft.; drlg. sh. 8,690 ft.

Iberia Parish

Texas Co. No. 3-B State-Vermilion Bay, Twp. 16s-5e. T. salt 5,970 ft.; B. salt 7,540 ft.; T.D. 7,714 ft.; 9⅝-in. csg. 7,-705 ft.; drlg. sh.&L. 8,464 ft.

Iberville Parish

Housh & Thompson No. 1 Kessler & Folse, Sec. 40-11s-13e. Drlg. sh. 6,612 ft.

Humble O. & R. Co. No. 1 Iberville Mortgage Loan Co., Inc., Sec. 74-7s-10e. 20-in. csg. 208 ft.; T.D. 10,025 ft.; abd.

Shell Pet. Corp. No. 1 Natalbany Lbr. Co., Sec. 18-9s-2e (tight well). No report.

Jeff Davis Parish

R. M. Bleakie et al No. 1 Lack-Moore Co., Ltd., Sec. 29-7s-6w. 13⅜-in. csg. 65 ft.; prep. to res. operations.

Stanolind O. & G. Co. No. 3-B Ervin & Bishop, Lot 15, Sec. 7-9s-5w. Loc.

Union Sulphur Co. No. 1 H. B. Tietje, Sec. 36-7s-4w. Drlg. sh. 8,969 ft.

La Fourche Parish

Gulf Oil Corp. No. 1 Grandison Ld. Co., Sec. 14-20s-23e. T.D. 8,241 ft.; 9⅝-in. csg. 8,241 ft.; drlg. sd. 9,226 ft.

J. Perry Scranton No. 2 Martinez, Sec. 132-15s-17e. Spd.

Texas Co. No. 1 L.L.&E. Golden Meadows, Sec. 77-19s-21e. 9⅝-in. csg. 10,744 ft.; T.D. 12,526 ft.; P.B. 11,810 ft.; made sqze. job; perf. csg. 10,769-71 ft.; tstd. S.W.; P.B. 10,269 ft.

Orleans Parish

W. T. Burton No. 3-B Faubourg de Montluzin, Sec. 1-11s-13e. R.U.

W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. T.D. 9,000 ft.; 7⅝-in. csg. 8,820 ft.; mixing mud.

W. T. Burton No. 3 L.&N.R.R., Sec. 25-11s-14e. Loc.

W. T. Burton No. 2 State-Lake Pontchartrain, Twp. 10s-10e. Loc.

Plaquemines Parish

Texas Co. No. 1 L.L.&E., Bastian Bay, Sec. 43-20s-28e. 9⅝-in. csg. 9,540 ft.; T.D. 10,662 ft.; P.B. 9,900 ft.; sdtrkd. 9,895 ft.; drlg. sh. 10,960 ft.

Pointe Coupee Parish

Falcon-Seaboard No. 1 J. H. Hobgood, Sec. 8-1s-7e. 10¾-in. csg. 1,456 ft.; T. Sparta 6,080-6,100 ft.; first sd. 6,108-18 ft.; no show; T. Cane River 6,680 ft.; T.D. 8,012 ft.; abd.

Rapides Parish

Gulf States Expln. Co. No. 1 Jack Cappel, Sec. 37-4n-4w. Drlg. sdy. sh. 3,660 ft.

St. Bernard Parish

Gulf Ref. Co. No. 4-State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; P.B. 9,700 ft.; rmd. to 9,658 ft.; lost core bbl.; P.B. sdtrkd. 8912 ft.; T.D. 10,528 ft.; 7-in csg. 10,494 ft.; fsg.

Vendome Pet. Co. No. 2 Kenilworth Plantation, Sec. 59-13s-14e. R.U.

St. Charles Parish

Texas Co. No. 1 L.L.&E. Paradis, Sec. 39-14s-20e. 9⅝-in. csg. 8,975 ft.; T.D. 10,787 ft.; twisted off D.S.; fsg.; C.O. hole 10,200 ft.; 7-in. csg. 10,177 ft.; perf. csg. 10,060-70 ft.; tstd. gas; sqzd. perf.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec. 38-12s-15e. 9⅝-in. csg. 8,534 ft.; T.D. 11,002 ft.; 7-in. csg. 11,002 ft.; P.B. 10,943 ft.; perf. csg. 10,928-40 ft.; flwd. 12 bbls. dist.; 4 hrs.; 11/64-in.

ck.; T.P. 4,500 lbs.; C.P. 4,600 lbs.; killed; drlg. hd. sdy. sh. 11,286 ft.

St. Martin Parish

Roper & Todd No. 1 Levert Plantation, Lot 40, Sec. 42-10s-7e. T.D. 9,029 ft.; S.D.

Texas Co. No. 12 St. Martin, Sec. 21-8s-7e. Drlg. sh. 1,209 ft.

St. Tammany Parish

Honey Island Dev. Corp. No. 1 W. C. Forbes, Sec. 33-7s-15e. T.D. 100 ft.; 20-in. csg. 87 ft.

Terrebonne Parish

Texas Co. No. 1 Continental Ld. & Fur Co., Sec. 29-18s-14e. O.W.D.D.; T.D. 12,483 ft.; prep. to test 9,765-82 ft.

Texas Co. No. 2 State-Coon Point, Twp. 23s-14e. 13⅜-in. csg. 1,900 ft.; drlg. sdy. sh. 5,726 ft.

Vermilion Parish

La. Ld. & Expln. Co. No. 1 La. Fur. Co., Sec. 21-15s-1e. Drlg. sh. 6,480 ft.

Vernon Parish

W. T. Burton No. 1 W. T. Burton Mineral fee, Sec. 32-1n-6w. R.U.

West Feliciana Parish

McKay et al No. 1 James Montgomery. Loc.

TEXAS

Week Ending May 20

GULF COAST FIELDS

Old Ocean—Brazoria County

Harrison & Abercrombie No. 2 Larsen et al, C. Breen Sur. Drlg. sh.&L. 5,887 ft.

Harrison & Abercrombie No. 1 C. W. Markle, Polly & Chance Sur. 9⅝-in. csg. 7,016 ft.; drlg. sh.&L. 9,787 ft.

Harrison & Abercrombie No. 2 Osburn, C. Breen Sur. R.U.

Mid-Continent Pet. Corp. No. 1 Wm. Chenault, C. Breen Sur. Loc.

Sun Oil Co. No. 1 Borsodi-Elkins, C. Breen Sur. 18⅝-in. csg. 121 ft.; 9⅝-in. csg. 7,010 ft.; cg. sh.&L. 9,720 ft.

Sun Oil Co. No. 3 Campbell, C. Breen Sur. Loc.

Cedar Point—Chambers County

Standard Oil Co. of Calif. et al No. 46-120 State. Loc.

Standard Oil Co. of Texas et al No. 56-94 State. T.D. 6,950 ft.; P.B. 4,300 ft.; sdtrkd.; sd. sd. 5,930-6,050 ft.; T.D. 6,399 ft.; 7-in. csg. 4,400 ft.; perf. csg. 3,957-70 ft.; tstd. S.W.; made sqze. job; W.O.C.; perf. csg. 2,838-46 ft.; tstd. S. W.; prep. to test 4,300-ft. sd.; perf. csg. 4,338-55 ft.; tstd. mud and S.W.; T.A.

West Columbia—Brazoria County

Texas Co. No. 32 Abrams, G. Tennille Sur. 10-in. csg. 1,170 ft.

Texas Co. No. 5 Goldman, G. Tennille Sur. T.D. 4,381 ft.; cutting and pulling D.P.; cleaned hole to 3,029 ft.; prep. to sdtrk.; drlg. sh.&L. in sdtrkd. 7⅝-in. csg. 4,309 ft.

Thompson—Fort Bend County

H. M. Naylor No. 1 W. L. Moody, H. Chrisman Sur. R.U.

H. M. Naylor No. 2 Musselman, H. Chrisman Sur. Drlg. sh. 2,630 ft.

Dickinson—Galveston County

Pure Oil Co. No. 1 Franz Kohfeldt et al, T. W. Johnson Sur. Drlg. sh. 6,430 ft.

League City—Galveston County

Geo. H. Echols No. 4 Ross-Stewart, Perry & Austin Sur. No. 3. T.D. 8,702 ft.; perf. csg. 8,683-8,702 ft.; flwg. est. 10 B.P.H.; ⅛-in. ck.

Phillips Pet. Co. No. 1 Bertha Lobit Wilson, Perry & Austin Sur. T.D. 10,427 ft.; 7-in. csg. 9,385 ft.; perf. csg. 8,932-43 ft.; flwd. oil and gas; sqzd. perf.; reperf. csg. 8,946-51 ft.; I.P. 81 B.P.D.; ⅛-in. ck.

Phillips Pet. Co. No. 1 Bryan, Perry & Austin Sur. R.U.&S.D.

Phillips Pet. Co. No. 1 Esperson-Phillips, S. F. Austin Sur. Loc.

Phillips Pet. Co. No. 2 Stewart Title Co., S. F. Austin Sur. Drlg. sh. 2,630 ft.

Salt Dome Oil Corp. No. 3 Ross-Stewart, Perry & Austin Sur. 10¾-in. csg. 3,- 100 ft.; T.D. 8,930 ft.; fsg.

West Prod. Co. No. 1 fee, Lot 2, Blk. 5, Perry & Austin Sur. Loc.

Aldine—Harris County

Earl Hankamer No. 1 W. B. Rowland, Lots 42 and 43, E. Farias Sur. R.U.

Texas Gulf Prod. Co. No. 10 P. Hairgrave, S. L. Noble Sur. Drlg. sh 1,206 ft.

Texas Gulf Prod. Co. et al No. 10 D. Heath, W.C.R.R. Sur. No. 2. Drlg. sh. 1,130 ft.

Bammel—Harris County

Hamill & Smith No. 1-B Zapp, Joseph Farwell Sur. Cg. gas sd. 6,206 ft.

H. M. Harrell et al No. 2 Ehrhardt, H. T.&B. Sur. T.D. 6,255 ft.; comp. as gas well.

Clear Lake—Harris County

Humble O. & R. Co. No. 8-C Humble-West, Wm. Dobie Sur. Drlg. sh. 4,367 ft.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.

Eureka—Harris County

Jack Frazier No. 1 W. T. Helberg, H. Reinerman Sur. R.U.

J. W. Frazier No. 3 Lena Dunn, H. Reinerman Sur. 10¾-in. csg. 2,509 ft.; T.D. 8,111 ft.; perf. csg. 7,696-7,701 ft.; tstd. S.W.

Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.

Means & McGehee No. 1-F Laura Lackner. Drk.

Tide Water Asso. Oil Co. No. 2-B Lackner, H. Reinerman Sur. Loc.

Fairbanks—Harris County

Sinclair Prairie Oil Co. No. 4 Goodykoontz, T.D. 6,850 ft.; W.O.

Stanolind O. & G. Co. No. 3 Jahnke, S. Lewis Sur. Drlg. sh. 1,506 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 12-B Humble-West, A. Whitlock Sur. Cg. 6,011 ft.

Humble O. & R. Co. No. 28-B Humble-West, Luke Hemenway Sur. Drlg. sh. 5,569 ft.

Humble O. & R. Co. No. 32 Humble-West, Luke Hemenway Sur. Drlg. sh. &L. 4,618 ft.

Humble O. & R. Co. No. 12 Keisling-Dixon, T. Choate Sur. Drlg. sh.&L. 3,-267 ft.

Satsuma Field—Harris County

Amerada-Stanolind O. & G. Co. No. 1-A W. S. Jacobs, W.C.R.R. Sur. No. 2. S.D. 6,906 ft.; T.A.

Stanolind O. & G. Co. et al No. 2-A Jacobs, W.C.R.R. Sur. T.D. 6,836 ft.; run electrical survey.

H. E. Williams et al No. 2 Behne, W.C. R.R. Sur. No. 2. 5½-in. csg. 6,857 ft., tstg.; no ga.

Cheek—Jefferson County

Humble O. & R. Co. No. 4 Jefferson Ld. Co., C. Hillebrandt Sur. Drlg. sh. 4,897 ft.

Clam Lake—Jefferson County

Shell Oil Co. Inc., No. 4 McFaddin, S. A. Pace Sur. T.D. 4,000 ft.; perf. csg. 3,-681-84 ft.; flwg. dry gas; ⅛-in. ck.

La Belle—Jefferson County

Sun Oil Co. No. 5 Broussard-Hebert, T. &N.O. Sur. No. 207. 18⅝-in. csg. 130 ft. T.D. 7,650 ft.; cmtd. 9⅝-in. csg. on bttm.; drlg. sh. 8,867 ft.

Esperson—Liberty County

General Crude Oil Co. No. 3-B Esperson, A. McNeil Sur. R.U.

General Crude Oil Co. No. 2-B Esperson, A. McNeil Sur. 10¾-in. csg. 1,-396 ft.; cd. sd.&sh, S.O.&G. 6,955-7,035 ft.; T.D. 7,350 ft.; perf. csg. 7,000-30 ft.; tstd. S.W.; sqzd. off perf.; perf. csg. 6,993-7,016 ft.; I.P. 510 B.P.D.; ⅛-in. ck.

Hardin—Liberty County

Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. R.U.

Humble O. & R. Co. No. 3 B. Partlow, H. B. Johnston Sur. T.D. 7,587 ft.; W. O.C.

Texas Co. No. 3 Smith, A. B. Hardin Sur. 9⅝-in. csg. 1,819 ft.; drlg. sh. 5,906 ft.

North Markham—Matagorda County

Ohio Oil Co. No. 2 Carlson, I.&G.N. Sur. No. 2. R.U.

Conroe Field—Montgomery County

E. I. Thompson, Tr., No. 1 W. D. Granger, T.&N.O. Sur. No. 14 (Wilcox test SE edge of prod.). R.U.

Orange—Orange County

Continental Oil Co. No. 19 Chesson, Wm. Dyson Sur. Drlg. sd.&L. 5,186 ft.

Gulf Oil Corp. No. 3-B Laflour, Wm. Dyson Sur. Drlg. sh. 2,620 ft.

Gulf Oil Corp. No. 10-A Winfree, Wm. Dyson Sur. Loc.

John Mayo No. 1 M. J. Williams, Dyson Sur. R.U.

Ace—Polk County

Patrick-Tyrell Drlg. Co. No. 1 Kirby-West, P. A. Sublett Sur. Drlg. sh. 5,-650 ft.

Dick Schwab No. 1-C Kirby-West Lbr. Co., G. A. Thomas Sur. Loc.

Shell Pet. Corp. No. 2 Doucett, P. A. Sublett Sur. Loc.

Segno—Polk County

Gulf Oil Corp. No. 4 Quinn, A. Morales Sur. R.U.

Gulf Oil Corp. No. 1 Ragan, I.&G.N. Sur. No. 15. R.U.

Gulf Oil Corp. No. 5 Ragan, I.&G.N. Sur. No. 15 Drlg. sh. 7,920 ft.

Gulf Oil Corp. No. 19 Wing, I.&G.N. Sur. No. 14. R.U.

Humble O. & R. Co. No. 12-B Kirby Lbr. Co., M. Victor Sur. 10¾-in. csg. 2,-166 ft.; drlg. sdy. sh. 7,967 ft.

Spurger—Tyler County

Republic Prod. Co. No. 20 fee, N. Hurd Lge. Drlg. sh. 7,478 ft.

GULF COAST WILDCATS

Brazoria County

Brown & Wheeler No. 1 Lloyd Callahan, Lot 194, J. M. O'Donnell Sur. T.D. 6,500 ft.; abd.

Crosby Drlg. Co. No. 1 H. A. Paine, A. G. Reynolds Sur. M.I.M.

Crosby Drlg. Co. No. 1 Geo. S. Wilson, A. C. Reynolds Sur. 10¾-in. csg. 2,925 ft.; T.D. 9,504 ft.; 7-in. csg. on bttm.; perf. csg. 9,463-69 ft.; flwd. S.W.; ¾-in. csg. ck.; perf. csg. 8,870-80 ft.; flwd. S.W.; perf. csg. 8,842-52 ft.; T. D. 10,475 ft.; abd.

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.

Hamman Explin. Co. No. 1 Darrington, Achilles McFarland Sur. 10¾-in. csg. 1,200 ft.; 7-in. csg. 8,887 ft.; T.D. 8,917 ft.; perf. csg. 8,250-8,300 ft.; flwd. 15 B.P.H.; ¼-in. ck.

Hamman Explin. Co. No. 2 Darrington State Prison Farm, F. Bingham Sur. Dig pits.

Simmons & Co. No. 1 Bula Marmion, L. M. H. Washington Sur. Loc.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

Housh & Thompson No. 1 Robbins, Edw. T. Branch Sur. 10¾-in. csg. 2,247 ft.; T.D. 9,512 ft.; abd.

Plymouth Oil Co. No. 1 Wilburn, Wm. H. Moore Sur. Loc.

Fort Bend County

Atlatl Roy. Corp. and Adams O. & G. Co. No. 1 C. H. Stancl, F. F. E. Alcorn Sur. Drlg. sh. 4,210 ft.

Royal O. & G. Co. et al No. 1 W. T. Bertrand, J. Wilkins Sur. T.D. 6,504 ft.; abd.

Superior Oil Co. No. 1 Shirle Beard et al, H.&T.C. Sur. No. 111. Loc.

Woodland Oil Co. No. 1 Henrietta Berg et al, H.&T.C. Sur., Sec. 25. R.U.

Hardin County

Norcoff Corp. No. 1 Caswell, B.B.B.&C. Sur. No. 72 (E flank Saratoga dome). Loc.

Harris County

Consolidated Oil Co. No. 1 Holtkamp, Eli Noland Sur. R.U.

John Deering No. 1 Ridgeview Farms, Duckworth Sur. 10¾-in. csg. 800 ft.

Jack Frazier No. 3 Lena Griffith, Whitney Britton Sur. T.D. 4,080 ft.; abd.

J. H. Woodard, Jr., No. 1 Miller Est., John Skorupski Sur. S.D. 5,133 ft.

Texas Gulf Prod. Co. No. 1 Weary, C Lot 2, E. Farcas Sur. 10¾-in. csg. 996 ft.; T.D. 7,664 ft.; P.B. 6,860 ft.; 5½-in. csg. 6,860 ft.; perf. csg. 6,824-34 ft.; I.P. 129 B.P.D.; ⅛-in. ck.

Jackson County

L. Glasscock No. 1 J. H. Drummond, R. Musquiz Sur. R.U.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.

Hebert & Smith et al No. 1 L. D. Fontenot, Sec. 17, H.T.&B. Sur. Drlg. sh. 1,310 ft.

Humble O. & R. Co. No. 15-B McFaddin Beach State, Gulf of Mexico, 660 ft. NW of No. 13-B. Loc.

Liberty County

Stanolind O. & G. Co. No. 1 E. M. Flowers, I.&G.N.R.R. Sur. 10¾-in. csg. 1,-588 ft.

Woodley Pet. Co. No. 1 Barrett, Rebecca Coleman Sur. Drlg. sh. 7,675 ft.

Madison County

A. O. Phillips et al No. 1 E. P. McWhorter, Amy Boatright Sur. Loc.

Matagorda County

Continental Oil Co. No. 1 Savage, Daniel Yeamans Sur. T.D. 1,265 ft.; W.O.C.

Sun Oil Co. No. 1 Cavallin, Theo. F. Koch subd., John Duncan Sur. 9⅝-in. csg. 8,502 ft.; T. gas sd. 9,313 ft.; T.D. 9,582 ft.; 7-in. csg. 9,582 ft.; perf. csg. 9,300-18 ft.; flwg. gas, mud, and S.W.; ½-in. ck.; T.P. 2,200 lbs.; C.P. 1,950 lbs.; killed; reperf. csg. 8,940-65 ft.; C.O.; showing wash wtr.; ½-in. ck.; flwd. 150 B.F.P.D., 75% S.W., 25% dist.; 11/64-in. ck.; T.P. 3,800 lbs.; C.P. 3,900 lbs.; killed; P.B. 9,039 ft.; reperf. csg. 8,620-45 ft.; flwd. 58 B.F., 34 bbls. dist., 24 bbls. S.W.; well went dead; W.O.; T.A.

Montgomery County

O. C. Garvey et al No. 1 Foster Lbr Co., Neil Martin Sur. T. Wix. 6,754 ft.; T.D. 7,041 ft.; abd.

Orange County

C. B. Bunte, Inc., et al No. 1 Miller Vidor Lbr. Co., John M. Swisher Sur. Drlg. sh. 3,520 ft.

San Jacinto County

J. W. Frazier No. 1 Annie Smith. J. D Martinez Sur. No. 10. 10¾-in. csg. 840 ft.; T.D. 4,454 ft.; rmg.

Wharton County

Cockburn Oil Co. No. 1 Sam Hamburger, W.C.R.R. Sur. No. 65. Drlg. sh. 4,025 ft.

Magnolia Pet. Co. No. 1 Borden, Henry Griffith Lge. 13⅜-in. csg. 1,322 ft.; drlg. sh. 5,560 ft.

Moore & Ahern No. 1 Mauritz Beaty, Seale, Forwood Sur. R.U.

S. W. TEXAS WILDCATS

Bastrop County

Fuchs, Milliner et al No. 1 Milliner, E. Standifer Sur. Drlg. L. 1,650 ft.; no report.

Joe Hughes et al No. 1 O. B. Lentz, Freeman Wilkinson Sur. No. 21. T.D. 2,-460 ft.; 5-in. csg. 2,303 ft.; tstg.

Marts & Beaven No. 1 Chiles, Wm. McLaughlin Sur. No. 11. Cd. L. O.S. 3,-217-20 ft.; T.D. 3,226 ft.; run csg. to test 3,217-20 ft.

Bee County

Dirks Bros. No. 1 Page, Thos. K. Pilkington Sur. R.U.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.

G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,208 ft.

Bexar County

Fred Beatty No. 1 Joppich, Iginio Tejado Sur. No. 186. 6⅝-in. csg. 575 ft.; S.D. 1,120 ft.; prep. to resume drlg.

L. L. Skaggs No. 1 Braubach, Fernando Rodriquez Sur. S.D. 325 ft.

Blanco County

H. C. McCart No. 1 Geo. Lester, Newton Carson Sur. No. 34. Drlg. 287 ft.

Caldwell County

Ben H. Fuchs No. 1 Chamberlain, Jos. Burleson Sur. S.D. 834 ft.

Cameron County

Salviejo and Pure Oil Co. No. 1 Gatewood and Dewberry, San Martin gr. R.U.

Duval County

J. B. Blanchard et al No. 1 Parr, T. C. Rogers Sur. No. 298. T.D. 4,715 ft.; rec. 400 ft. P.L.O., 30 ft. S.W.; D.S.T. 4,710-15 ft.; perf. csg. 4,253-67 ft.; flwg. est. 6 B.O. and wash wtr. per hr.; ⅛-in. ck.

W. L. Catlin et al No. 1 Louis Escapule, J. Poitevent Sur. No. 73. Loc.

Lee Corkill et al No. 1 Tomkin, P. Benavides Sur., Sec. 30. T.D. 5,517 ft.; S.D.

P. L. Keller et al No. 1 L. Gruy Est., J. Poitevent Sur. No. 391. T.D. 2,786 ft.; abd.

Wm. Nichols et al No. 1 Tom Graham, Cuadrilla Irrg. Sur., Sec. 572. Drlg. sh. 3,250 ft.

W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D.

Edwards County

O. L. Alderfer and C. W. Davis No. 1 J. A. Earwood, C.C.S.D.&R.G.N.G.R.R. Sur., Sec. 158. S.D. 80 ft.

Goliad County

Cron & Gracey et al No. 1 O. G. Dreier, B.S.&F. Sur. No. 7. Set 1,320 ft. of 7-in. lnr. at 5,190 ft.; T.D. 5,885 ft.; set 812 ft. of 5-in. lnr.; perf. 5,566-70 ft.; tstd. S.W.; W.O.

Guadalupe County

Burton, Garvin & Womack No. 1 Henry Weil, E. De los Santos Coy Sur. No. 93. L. O.S. 200-10 ft.; 6-in. csg. 210 ft.

H. H. Coffield No. 1 Wells, C. C. Carrier Sur. T.D. 3,363 ft.; abd.

All Sizes of MAC BALLS & SEATS in STEEL . . . . BRASS BRONZE AND STAINLESS

Ask for complete details and price list.

McGREGOR WORKING BARREL COMPANY

Bradford, Pa., U.S.A.

John Hueners No. 1 Boecker, John Baker Sur. No. 26. S.D. 915 ft.
Shary Maddox No. 1 A. C. Neal, Santa Anita gr. Loc.
Midwestern Pet. Co. No. 3 W. K. Anderson, Green Dewitt Sur. Cd. sat. L. 2,355-66 ft.; T.D. 2,366 ft.; 7-in. csg. 2,347 ft.; swbd. dry; S.D.
Pantano Pet. Co. No. 1 R. E. Harding, La Mestena Rnh. subd. (La Blanca field). Loc.
Trio Oil Co. No. 1 Jahns Herman, Jose K. Davis Sur. No. 12. T.D. 3,049 ft.; P.B. to sdtrk.; pulled in drk.; rebldg. drk.

Hidalgo County

Rowan & Hope No. 1 Antonio Bazan, San Ramon gr., Juan Faris Sur. No. 4. Drlg. sdy. sh. 7,215 ft.

Jim Hogg County

A. W. Dillard No. 1 Julian Ramirez, John S. Williams Sur. T.D. 3,010 ft.; abd.
Imperial Oil Co. No. 1 Jose M. Gutierrez, H. Rodriquez Sur. No. 142. 10-in. csg. 40 ft.
Johnson & Robinson No. 1 Palacios Mary Montgomery Sur. S.D. 2,875 ft.
Phillips Drlg. Co. No. 1 Allen, H.&G.N. Sur. No. 21. S.D. 90 ft.

Jim Wells County

Bridwell Oil Co. No. 1 M. W. Smith, La Trinidad Sur. T.D. 5,251 ft.; run csg.; rec. 1,080 ft. P.L.O.; D.S.T. 5,231-41 ft.
L. Glasscock No. 1 Robt. Adams, Juan Hermandez Sur. Drlg. sh. 4,626 ft.
Frank Gravis, Inc., No. 1 O. L. Richardson, J. Poitevent Sur. Drlg. sh. 5,030 ft.
H. H. Howell No. 1 W. K. Hoffman, Lavaca gr. R.U.
Rich Irwin et al No. 1 Garcia Est., R. J. Kleberg Sur. T.D. 5,464 ft.; abd.
Lewis Prod. Co. No. 1 Robt. Adams, Robt. Adams Sur. Cg. sh. 4,618 ft.
Magnolia Pet. Co. No. 1 J. O. Maun, Lot 6, Blk. 11. Drlg. sh. 3,915 ft.
Parr Drlg. Co. No. 1 W. K. Hoffman, LaVaca gr., Sec. 8, T.D. 5,806 ft.; 5½-in. csg. 5,806 ft.; perf. csg. 5,622-37 ft.; flwg. 35 B.P.D. by hds.; 1-in. ck.; T.P. 200 lb.; C.P. 1,375 lb.
W. R. Quinn et al No. 1 D. M. and Fritz Pundt, T. C. Wright Sur. Drlg. sh. 4,536 ft.
G. L. Ramsey No. 1 O. L. Richardson, J. Poitevent Sur. Drlg. sdy. sh. 4,870 ft.
Dick Schwab et al No. 1 Stehle, H.&G.N. R.R. Sur. No. 3. Drlg. sh. 2,860 ft.
Dick Schwab et al No. 1 Stehle, H.&G.N. R.R. Sur. 10¾-in. csg. 509 ft.; drlg. sdy. sh. 2,685 ft.
Shell Pet. Corp. No. 1 2 Von Blucher, Lucinda Best Sur. T.D. 7,517 ft.; make D.S.T.
Texas Gulf Prod. Co. No. 1 A. M. Perez, La Tinaja de Lara gr. T.D. 6,862 ft.; 5½-in. csg. 6,555 ft.; perf. csg. 6,485-6,530 ft.; perf. csg. 6,429-34 ft., 6,463-68 ft., 6,493-98 ft.; well blew 3 times; swbd. dry; abd.
R. S. Waldron et al No. 1 C. B. and Peck Welhausen, Geo. Rounds Sur. Drlg. sh. 4,510 ft.

Kendall County

C. M. Dewey No. 2 Seidensticker, R. Davis Sur. No. 20. Drlg. 635 ft.
Fred Turner et al No. 1 Lindner, J. Brown Sur. No. 619. Drlg. 365 ft.

Kenedy County

Humble O. & R. Co. No. 2 Kenedy, E. L. Penascal gr. Drlg. sh. 6,516 ft.

Kimble County

W. S. Kelly No. 1 A. L. Bierchwale, D. Lloyd Sur. Drlg. 106 ft.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. T.D. 6,404 ft.; acd.; R.U. pmpd. 100 bbls. fluid; 36 hrs.; 3 bbls. oily emulsion, bal. S.W.; dpnd. to T.D. cg. dpr.; cd. 6,422-29 ft., L.

Live Oak County

Harry Hotchkin No. 1 Hamilton Bros., H.&G.N.R.R. Sur. No. 1. T.D. 2,230 ft.; abd.
Illinois Pet. Co. No. 1 Adams, Simmonds subd., Blk. 58. 10¾-in. csg. 40 ft.; T. D. 2,343 ft.; abd.
L. W. Stieren No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

Mid-Western Pet. Corp. No. 1 C. E Byrne, Geo. Pittuck Sur. S.D. 1,250 ft.
Patada Pet. Co. No. 1 A. J. McKean, M. R. Vela Sur. No. 200. Cg. wtr. sd. 871 ft.
C. D. Scarborough and Bigiane No. 1 Paul Foyt, James Garner Sur. No. 6. S.D. 1,228 ft.; 7-in. csg. 1,251 ft.

Medina County

J. I. and J. W. Cromwell No. 1 Tschirhart, I. J. Rogers Sur. No. 18. Abd. 1,110 ft.
Victor Ziegler No. 1 Paul Haby, Wm. G. Still Sur. No. 1. S.D. 1,000 ft.

Milam County

H. R. Edwards et al No. 2 Camp, D Robertson Sur. R.U.
R. S. Kirby et al No. 1 Von Gonten, Maria J. Delgado Sur. S.D. 2,260 ft.

Nueces County

Wm. Nicholls No. 1 Florence Richardson, Sec. 10, Enrique Villareal gr. Drlg. sh. 2,436 ft.
Seaboard Oil Co. No. 1-A John LaPrelle, Lot 9, Roberts & White subd. Rec. 630 ft. P.L.O.; D.S.T. 4,347-61 ft.; drlg. sh. 7,489 ft.
Texas Conservative Oil Co. No. 1 Brock, Sec. 55, Driscoll townsite, Pauls subd. Spd.

Refugio County

Humble O. & R. Co. No. 3 Laura Thomas, Patrick Downey Sur. Drlg. sh. 3,637 ft.
Quintana Pet. Corp. No. 10 Williams, C. E.P.I.&M. Co. Sur. Drlg. 5,412 ft.
Royal O. & G. Co. et al No. 1 Jurica, Esteban Lopez Sur. T.D. 6,510 ft.

San Patricio County

Seaboard Oil Co. No. 1 Person, A.B.&M. Sur. No. 6. Drlg. sh. 5,216 ft.

Starr County

C. L. Foster No. 1 H. Garza, Juan Salinas, Porc. No. 71. S.D.; no report.
Lynes & Robertson No. 1 Villareal, C.C. S.D.&R.G.N.G.R.R. Sur. No. 241. Loc.
Magnolia Pet. Co. No. 1 M. M. Garcia, S. Vela, Porc. No. 90. Drlg. sh. 6,436 ft.
Bishop & Moss No. 1 S. B. Ricaby, M. M. Martinez, Porc. 83. Oil sd. 1,294-1,305 ft.; tstg.
Rowan & Hope et al No. 1 Cameron, Sur. No. 228. Cd. 4,160-70 ft., oil sd.; T.D. 4,216 ft.; cmtd. csg. on bttm.
Whitfield & Southern No. 1 Carruth, S. Vela, Porc. No. 90. 10-in. csg. 300 ft. cg. 2,728 ft.

Travis County

Chester Barnes et al No. 1 Swenson, Lemuel Kimbro Sur. No. 46. 10¾-in. csg. 54 ft.
Oscar Raesz et al No. 1 J. W. Swahn, Phillips McElroy Sur. No. 16. S.D. 566 ft.
Williams & Vick No. 1 Montpelier Saving Bnk., C. Barker Sur. No. 38. Drlg. serp. 800 ft.

Webb County

J. M. Anderson et al No. 1 Frost. C.C.S. D.&R.G.N.G.R.R. Sur. No. 17. Loc.
Harvey and Henderson No. 1 A. Perez, J. Poitevent Sur. No. 459. R.U.
Johnson and Robinson No. 1 Mabel Adami, A.B.&M. Sur. No. 35. T.D. 909 ft.; W.O. csg.; S.D.
Navarro Oil Co. No. 2 Benavides, Chas. Callighan Tr. 10-in. 41 ft.
Rowe & Scheig No. 1 Kirkpatrick, C.C. S.D.&R.G.N.G.R.R. Sur. No. 59. Loc.
Smith & Storey No. 1 Houston Oil Co., R. O. Barnsley Sur. No. 24. 5½-in. csg. 1,830 ft.; perf. csg. 1,834-65 ft.; S.D. 2,475 ft.

Willacy County

Midwest Royalty Co. No. 1 Dayton, San Juan Decarriutas San Matias subd., Sh. No. 47. 10¾-in. csg. 2,370 ft.; drlg. sh. 3,630 ft.

Williamson County

W. O. Caffey No. 1 J. Seggern, Hardy Pace Sur. Drlg. chk. 970 ft.; no report.
O. A. Wolters No. 1 Nelson, Geo. W. Glasscock Sur. Drlg. L. 463 ft.

Zapata County

John F. Camp. No. 1 Hinnant, R. Hinnant Sur. 72. Loc.
Freeman and Smith No. 1 Carlos Vela, Porc. No. 20. R.U.
Joe Martinez No. 1 A. M. Bruni, J. V. Broego gr. T.D. 459 ft.; P.B. 376 ft.; 6⅝-in. csg. 356 ft.

WEST TEXAS WILDCATS

Andrews County

Richmond Drlg. Co. No. 1 University, Sec. 25, Blk. 12, Univ. Sur. Loc.
J. W. Trippiehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. S.D. 4,480 ft.

Brewster County

H. D. Wilcox No. 2 Kokernot, Sec. 23, Blk. C, J. V. Massey Sur. Drlg. 923 ft.

Cochran County

T. G. Shaw, Tr., No. 1 Carrie S. Dean Lge. 94. Swbg. 12 B.F.P.H.; S.I. 5,001 ft.

Crane County

P. A. Christian No. 1 M. F. Stephenson, Cert. 2044, W. H. Bates Sur. No. 40. Drlg. 1,445 ft.
Gulf Oil Corp. No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. Est. 51 B.O.P.D.; drlg. 3,814 ft.
Standard Oil Co. of Texas No. 1 N. A. Adams, Sec. 12, Blk. 24-B, P.S.L. Sur. Drlg. 2,590 ft.

Crockett County

Humble No. 1 Ozona-Barnhart, Sec. 4, Blk. M-N, G.S.&F. Sur. Drlg. 8,478 ft.

Crosby County

Gulf Oil Corp. No. 1-C Swenson, Sec. 85, Blk. 2, H.&G.N. Sur. Drlg. 3,540 ft.

Culberson County

Quito Oil Co. No. 1 Cameron Lbr. Co Sec. 24, Blk. 81, P.S.L. Sur. S.D.R 945 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N Sur. Repg. rig. 3,662 ft.
Humble O. & R. Co. No. 1 Matador Ld. & Cattle Co., Sec. 26, Blk. 1, Shock & Arnold Sur. T.D. 7,074 ft.; drlg. plug 6,925 ft.; P.B. 6,925 ft.; bailing and tstg.

Ector County

Barnes-Conklin & White No. 1 T.&P. Lds., Sec. 28, Blk. 45, T.&P. Sur. Drlg. 3,556 ft.
R. H. Gill No. 1 J. E. Parker, Sec. 12, Blk. 45, T.&P. Sur. Loc.
Landreth Prod. Corp. No. 1-A Frank Cowden, Sec. 10, Blk. 44, T.&P. Sur. D.&A. 4,617 ft.
Lee Drlg. Co. No. 1 J. L. Johnson, Sec. 5, Blk. 42, T.&P. Sur. Rng. 7-in. 4,050 ft.
M. B. K. Drlg. Co. No. 2 Gist, Sec. 9, Blk. 42, T.&P. Sur. Drlg. 4,175 ft.
S. W. Richardson No. 1 T.&P. Lds., Sec. 13, Blk. 45, T.&P. Sur. Drlg. 1,000 ft.
Sloan & Zook No. 1 J. L. Johnson, Sec. 34, Blk. 43, T.&P. Sur. Drlg. 1,380 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. R.U.S.T.; to P.B. and sdtrk.; T.D. 3,571 ft.; sidetracking hole 1,925 ft.; W.O.C. 1,752 ft.

Gaines County

Humble O. & R. Co. No. 1 W. T. Caswell, Sec. 10, Blk. 24-A, P.S.L. Sur. Drlg. 3,005 ft.
Osage Drlg. Co. No. 1 E. H. Jones, Sec. 20, Blk. 7-A, P.S.L. Sur. Drlg. 5,123 ft.

Glasscock County

J. R. Petty No. 1 Joe Blake, Sec. 163, Blk. 29, W.&N.W. Sur. Drlg. 1,260 ft.
Shell Pet. Corp. No. 1 A. Neal, Sec. 38, Blk. 33, T.&P. Sur. Drlg. 2,450 ft.

Hockley County

Texas Co. No. 1-C Mallett, Lbr. 11, Lge. 51, Scurry C.S.L. Sur. S.I. 5,050 ft.; comp.; 550 B.O.P.D.

Howard County

Dick Graham No. 1 P. Johnson, Sec. 34, Blk. 32, T.&P. Sur. Loc.
Ooley & McQuain No. 1 O'Daniels, Sec. 39, Blk. 30, T.&P. Sur. Drlg. 3,092 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6, S.G. 6,340-45 ft.; swbg. 6,402 ft.
Haymon Krupp No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. W.O.C. 5,365 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. S.D.O. 4,450 ft.

Martin County

T. G. Shaw, Tr., No. 1 Wilkerson, Sec. 35-A, B.&C. Sur. S.D.O. 4,130 ft.

Pecos County

L. Cain No. 1 Masterson-Lehn, Sec. 71, Blk. 10, H.&G.N. Sur. Drlg. 90 ft.
Leidecker & Cain No. 1 M. M. Lehn, Sec. 71, Blk. 10, H.&G.N. Sur. S.D.; csg. 1,743 ft.; flwg. 20 B.O.; 24 hr.; C.O.
O. E. Schade No. 1 Otis Garrett, Sec. 59½, Blk. 8, H.&G.N. Sur. Tstg. est. 35 B.O.P.D.; T.D. 2,290 ft.; swbg. est. 20 B.O.P.D.; 5 B.W.P.D.; tstg. on pmp.
Superior Oil Corp. No. 1 V. W. Crockett, Sec. 5, Blk. 110, T.C.R.R. Sur. Drlg. 840 ft.
Superior Oil Co. No. 1 V. W. Crockett, Sec. 7, Blk. 110, T.C.R.R. Sur. C.&P.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. D.&A. 1,943 ft.
S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Rig burned; dropped bailer in hole; S.D.O. 7,342 ft.
J. C. Trees No. 1 fee, Sec. 63, Blk. 3, H.&G.N. Sur. Tstg. on pmp.; est. 5 B. O.P.D. and 5 B.W.P.D.; S.D.O. 2,359 ft.
C. W. Williams No. 1 J. Eaton, Sec. 1, Blk. 203, J. H. Handy Sur. Rng. csg. 1,735 ft.
C. W. Williams No. 1 T.&P. Ld., Sec. 95, Blk. 3, T.&P. Sur. Drlg. 765 ft.

Presidio County

L. C. Brite No. 4 fee, Sec. 113, Blk. 12, G.H.&S.A. Sur. S.D.O. 5,602 ft.
Marfa Oil Co. No. 1 Fischer ranch, Sec. 31, Blk. 8, G.H.&S.A. Sur. M.I.M.
H. D. Wilcox No. 2 Jones-Coffield, Sec. 308, Blk. 4, H.&T.C. Sur. C.O. 1,840 ft.

Reeves County

Artie Baker No. 1 J. W. Grider, Sec. 31 Blk. 58, P.S.L. Sur. S.D.R. 450 ft.

Schleicher County

Lone Star Gas Co. No. 1 Bert Page, Sec 30, Blk. L, G.H.&S.A. Sur. Drlg. up bailer 5,720 ft.
Lone Star Gasoline Co. No. 2 Bert Page, Sec. 46, Blk. L, G.H.&S.A. Sur. Drlg. 5,662 ft.

Scurry County

Coffield & Guthrie No. 1 First Natl. Bk., Snyder, Sec. 29, Blk. 97, H.&T.C. Sur. C.O. 2,450 ft.; T.D. 3,184 ft.; swbg. est. 25 B.O.P.D.; tstg. 3,184 ft.
J. B. Stoddard No. 1 R. O. McClure, Sec. 142, Blk. 97, H.&T.C. Sur. C.&P.
H. C. Wheeler No. 1 M. Sims, Sec. 141, Blk. 97, H.&T.C. Sur. Drlg. 1,645 ft.

Stonewall County

Forest Dev. Co. No. 1 T. A. Ellison, Blk. D, Sec. 114, H.&T.C. Sur. D.&A. 3,596 ft.
Forest Dev. Co. and King Drlg. Co. No. 1 Moreland, Sec. 183, Blk. D, H.&T. C. Sur. W.O.C. 250 ft.
Shell Pet. Corp. No. 1 T. K. Smith, Sec. 143, Blk. 1, H.&T.C. Sur. Abd. loc.

Terrell County

Shirley, Lanham & Blakeney No. 1, Sec. 45, Blk. 2-B, C.C.S.D.&R.G.N.G. Sur.; 2,500-ft. test, Loc.

Tom Green County

Lynn & Cobb No. 1 I. B. Cox, Val. Mueller Sur. No. 176. S.D. 368 ft.
Roush & Steward No. 1 Pugh, James Eldridge Sur. No. 73. S.D. 194 ft.; est. 10 ft. O.I.H.
Dan Short et al No. 1 J. G. Davidson, NW part of Lovie P. Moore Sur. Drlg. 890 ft.
Southern Cross No. 1 Upton & Upton, Sec. 20, Blk. A, A.B.&M. Sur. Drlg. 4,400 ft.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. S.D.O. 5,803 ft.; tools out of hole.

Ward County

Peerless O. & G. Co. No. 1 Texas Cotton Ind., Sec. 35, Blk. 1, H.&T.C. Sur. Tstg. 50 B.O.P.D.
Geo. Wallace No. 1 R. Avery, Sec. 36, Blk. 1, H.&T.C. Sur. S.D. 2,104 ft.

Yoakum County

W. A. Hudson No. 1 J. D. Webb, Sec. 545, Gibson Sur. Loc.
Shell Pet. No. 1 Waples-Platter, Sec. 616, Tstg. 5,380 ft.; hole fills at rate of 100 ft. per hr.; making 1 bailer of wtr. per hr.; P.B. 5,312 ft.; tstg. 74 B.O. in 18 hrs.

TEXAS PANHANDLE

Castro County

English et al No. 1 Gundlach, NW¼ Sec. 145, Blk. 6-M, S.K.&K. Sur. Loc.

Collingsworth County

Johnson No. 1 Taylor, Sec. 10-17, H.&G. N. Sur. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell, Sec. 18, Blk. 3, X. Sur. U.R. 5,626 ft.

Gray County

Products O. & G. Co. No. 1 Mason Davis, Sec. 23, Blk. 23-M, H.&G.N. Sur. Loc.

Lipscomb County

Darrouzett Oil Co. No. 1 Pugh, 1½ mi. S and 1 mi. W of Darrouzette. S.D.; wtr. 3,401 ft.

Roberts County

E. J. Dunigan, Jr., No. 1 Ledrick, Sec. 34, Blk. C, G.&M. Sur. Drlg. rig.

Wheeler County

Smith Bros. No. 1 Ribble, Sec. 46, Blk. 5-A, H.&G.N. Sur. S.D. 2,515 ft.

E. C. TEXAS WILDCATS

Angelina County

Ginter Bros. No. 5 Copes Hrs., J. Morin Sur., 3 mi. E of Dibol. Rng. csg. 2,193 ft.
Ginter Bros. and Jones No. 6 Copes Hrs., J. Morin Sur., 3 mi. E of Dibol. M.I.R.

Falls County

M. A. Hayes No. 1 D. G. Wooten, J. Powell Sur., 8 mi. SE of Zott. W.O.C. 40 ft.
Jack Shaunfield No. 1 Bargonier, J. M. Graham Sur., SE of Chilton. S.D. 410 ft.

Grayson County

John Grey No. 1 Freedman, W. S. Reeves Sur., 8 mi. NW of Denison. O.S. 1,357-59 ft.; S.D. 1,381 ft.; S.O.; prep. test.
Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville, 4,000-ft. test. S.D.O. 3,929 ft.
Prince Bros. No. 1 Williams, S. Nix Sur., 2 mi. NE of Van Alystine. S.D. 928 ft.
Ross & Marshall No. 1 J. N. Taylor, W. Moore Sur., 8½ mi. NW of Denison.
Sinclair Prairie Oil Co. No. 1 M. Williams, R. H. Sowell Sur., 1 mi. SW of Collinsville. Drlg. 2,416 ft.

Henderson County

Richards & Holloway, Inc., No. 1 G. E. Murphy, J. M. Gardner Sur., 6 mi. SW of Mabank. Drk.
Richards & Holloway No. 1 Rowe & Baker, J. T. Childers Sur., 6 mi. SW of Mabank, 400 ft. W of Tyler & Smith No. 1 Rowe & Baker discovery well. M.I.R.
Tide Water-Seaboard-Humble No. 1 Lewis, J. K. Stokes Sur., 1 mi. N of Opelika area. Drlg. 2,160 ft.
Tide Water-Seaboard-Humble No. 1 Scott, C. Robb Sur., 3 mi. SW of Opelika area. Drlg. 3,883 ft.

Hill County

A. V. Abernathy and L. N. Sanders No. 1 E. M. Farrell, M. Mata Sur., ¼ mi. NE of Mt. Calm. S.D. 870 ft.
Sykes-Brennals No. 1 Weatherly, W. O. Nerriweather Sur., 4 mi. SE of Hillsboro. S.D. 2,557 ft.

Houston County

Cities Service Oil No. 1 C. C. Hill, J. D Procella Sur., 2 mi. W of Grapeland. Perf. csg. to test; installing separator 6,014 ft.
G. C. Dixon No. 1 W. Goodman, J. J. Thomas Sur., ¾ mi. E of Lovelady. Drlg. 168 ft.
W. W. Henschliffe No. 1 J. Gilmore, Nathan Wade Sur., 1 mi. N of Navarro Crossing pool. Rng. csg. to test 5,891 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. S.D. 2,200 ft.
Valentine & DeArman No. 1 C. E. Bowman, D. Falcon Sur., 1½ mi. S of Kaufman. W.O.C. 104 ft.
W. G. McGee No. 1 General American Life Ins. Co., John Baker Sur., 6 mi.

W of Mabank. T.S. 3,070 ft.; S.O.; S.D. 3,093 ft.
Tyler & Smith No. 1 Trinity farms, G. Crocher Sur., 3½ mi. SW of Mabank. Loc.

Leon County

Humble O. & R. Co. No. 1 W. O. Harris, T. O. Harris Sur., 4 mi. NW of Navarro Crossing; offset to No. 1 Ed Swift. T.D. 5,917 ft.; comp.; 53,000,000 cu. ft. gas.
Humble O. & R. Co. No. 1 C. R. Polen, H. W. Sublett Sur., 4 mi. NW of Navarro Crossing pool. Drlg. 4,350 ft.
J. K. Hughes No. 1 H. Pearlstone, J. F. Files Sur., 4 mi. S of Keechi. Drlg. 4,380 ft.

Nacogdoches County

D. McDaniels No. 1 T. H. Seale, J. A. Cherino Sur., just outside of city limits of Cherino. S.D. 490 ft.

Navarro County

W. H. Strong No. 1 Emma Jackson, J. McNeal Sur., 10 mi. S of Corsicana. S.D. 780 ft.
W. H. Strong No. 1 Estes Bros., Wm. Bartelles Sur., 1½ mi. SW of Roane. U.R. 970 ft.
Topaz Oil Co. No. 1 E. Trammel, R. Mathews Sur., 4 mi. NE of Bazzett. Pits.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. S.D. 720 ft.

Red River County

Hampton, Osteen & Wooley No. 1 J. M. Roberts, J. Ware Sur., 12 mi. N of Clarksville. Abd. loc.

Robertson County

J. E. Cox No. 1 Sandifer, H. Henry Sur., 3½ mi. SE of Franklin. Loc.

Rusk County

Hamm & Bogges No. 1 W. G. Ross, J. McCune Sur., 3 mi. NW of Mount Enterprise. Drlg.

Smith County

Dr. T. T. Grant No. 1 T. W. Thweatt, J. Burch Sur., 2 mi. NE of Garden Valley. S.D. 4,007 ft.
J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ½ mi. SE of James town. Tstd. S.W.; P.B. 2,012 ft.; swbg. S.W.

Trinity County

McApline No. 1 C. V. Dilley, J. Grissett Sur., 7 mi. N of Trinity. Drlg. 340 ft.

Van Zandt County

F. A. Richardson No. 1-A B. C. Dodd, T. W. Hutchinson Sur., 2 mi. S of Grand Saline. Drlg. 4,292 ft.

NORTH TEXAS WILDCATS

Archer County

British American O. P. Co. No. 1 T. B. Wilson, Sec. 12, H.&T.C. Sur. Sat. L. 4,666-4,759 ft.; 8¾-in. 4,739 ft.; perf. 4,666-95 ft.; tstg.; est. 10 B.O.P.H.
G. E. Kadane & Sons No. 1 J. Hemmi, Sec. 60, Clark & Plumb Sur., Blk. 3. Drlg. 4,775 ft.
W. B. Omohundro No. 1 A. B. Peckham, Sec. 22, H.&T.C. Sur., Blk. 1. Spdg.
Phillips Pet Co. No. 1 J. B. Miller, Sec. 20, A.T.N.C.L. Sur. Fsg.; T.D. 4,074 ft.
L. Sikes No. 1 Miller, Wm. Shaw Sur. A-378. 6⅝-in. cmtd. 5,218 ft.; drld. plug; tstd. S.W.; perf. csg. 3,600 ft.; H.F.S.W.; cmtd.; W.O.C.

Baylor County

British Am. O. P. Co. No. 1 J. E. Cope, Sec. 220, T.&N.O. Sur. 6⅝-in. 2,850 ft.; tstg. after perf. csg. 2,808-15 ft.
British Am. O. P. Co. No. 1 F. C. Green "L," Sec. 8, H.T.&B. Sur. 6⅝-in. 3,130 ft.; perf. 3,060-65 ft.; S.O.&G.; tstg. after perf.; est. 25 B.P.D.

Clay County

L. T. Burns No. 1 E. F. Calloway, Lot 9, Hopkins Co. Sch. Ld. Drk.
Burns and Consolidated Oil Co. No. 1 G. A. Sealing, Sec. 6, H.T.&B. Sur. A-879. Drlg. 3,103 ft.
Frabar-Hodges and Mid-Union Drlg. Co. No. 1 Mrs. R. C. Kinder, Lot 11, Clark & Plumb Sur., Blk. 2. Drk.
H. S. Moss No. 1 T. J. Parmley, Sec. 6s, M.G.S.L. Sur. A-308. S.D. 4,055 ft.
Shell Oil Co., Inc., No. 1 W. A. Davis, Sec. 93, J. H. Belcher Sur. Balling S. S.O. 4,923-5,012 ft.; 6⅝-in. 4,923 ft.; W. O.C.; T.D. 5,100 ft.

Cooke County

Continental Oil Co. No. 1 W. M. Gwyn, F. J. Lindheimer Sur. A-576. Drlg. 1,187 ft.
Needham & Richards No. 1 Peary, T. Toby Sur. A-1047. Drlg. 2,391 ft.
Geo. Ross & Co. No. 1 B. Inglish, G. W. McGowan A-695 Sur. 6⅝-in. csg. 1,609 ft.; S.S.O. 1,678-33 ft.; S.S.O. 1,740-41 ft.; drlg. 1,901 ft.
Sinclair Prairie No. 8 J. M. Best, T. Toby Sur. A-1054. Tstg. S.S.O. 5,143-71 ft. (200 ft. below regular pay); P.B.

Hardeman County

N. Gilbert No. 1 R. Weakley, Sec. 35, H. &T.C. Sur., 4,000-ft. test. Loc.

Jack County

N. B. Crenshaw et al No. 1 J. W. Kinder, J. G. Coe A-145. Drlg. 1,900 ft.

Montague County

Bridwell Oil Co. No. 1 H. A. Reynolds, Sec. 9, E.T.R.R. Sur. Drlg. 2,051 ft.
Cordova-Union Oil-Gillespie No. 1 Cable, Stephenson Sur., Abst. 462. Loc.

Wichita County

Hanlon-Buchanan, Inc., No. 1 Fassett & Tuttle "F," D.L.&C. Sur. A-596. Drlg. 3,581 ft.

Wise County

H. Jackson No. 1 F. Neeley, Blk. 29, Matagorda Co. Sch. Ld. Spd. and S.D.
H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Lds. Pits.

Wilbarger County

Lawson & Leavell No. 16 W. T. Waggoner A. Sec. 109. H.&T.C. Sur., Blk. 14; 3,500-ft. test. Fsg. 1,332 ft.

Young County

Brazos Young Corp. No. 1 Texas Co., J. S. Lee Sur. A-173. Drlg. 4,705 ft.
H. M. Leidecker No. 1 J. M. Nail, Sec. 1997, T.E.&L. Sur. Drlg. 4,111 ft.
Long & Lupton No. 1 A. Crouch, L.&G. N. Sur. A-1460. 6⅝-in. 3,865 ft.; sat. L. 3,940 ft.; treating with acid; test wtr.; S.D.O.

WEST CENTRAL TEXAS DISTRICT

Brown County

T. W. Allmon No. 1 Almeda Moore, Jesse Williams Sur. No. 144, Abst. 931. S.D.O. 1,082 ft.
A. D. Bruce No. 1 L. J. Mauldin, Sec. 15, H.&T.C. Sur. Abd. 520 ft.
Hickey No. 1 Newton, Stephen Jones Sur., Abst. 546. S.D.O. 1,015 ft.
Lancaster & Melton No. 1 McArthur, B. S.&F. Sur. No. 33, Abst. 133. S.D.R. 950 ft.
Lynn No. 1 Nesbitt Rice, M.E.P.&P. Sur., Blk. 25. Fsg. 560 ft.

Callahan County

Adoms & Ely, Tr., No. 1 Erwin, NW¼ Sec. 350, Geo. Hancock Sur. S.D.O. 4,512 ft.
J. W. Dobbs Oil Corp. No. 2 Finley, Sec. 75, Bayland Orphans Home Lds. Skd. rig 50 ft.; S.D. 741 ft.
Joe Fainer No. 1 M. Guyton, John Barton Sur. No. 8, Abst. 11. W.O.C. 1,885 ft.; S.O.
E. L. Thomas No. 1 Ramsey, Sec. 104, B.B.B.&C. Sur. S.D. csg. 1,192 ft.

Coleman County

Dale Smith No. 1 T. M. Hayes, Mund Gross Sur. No. 44. D.&A. 260 ft.

Comanche County

Comanche O. & G. Co. No. 1 J. E. McGuire, C. Rockefeller Sur. No. 3. S.D. O. 2,910 ft.
E. T. DeArman No. 1 Moorman, Sec. 37, D.&D.A. Sur. S.D.O. 2,860 ft.

Concho County

Clymore Co., Inc., No. 1 Hill, J. Frederick Sur. Fsg. 2,565 ft.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Drlg. 2,970 ft.
G. M. Grace No. 1 J. W. Caudle, W. Mitchell Sur., Abst. 382. S.D.O. 900 ft.
W. R. Ritchey No. 1 Weddington, Sec. 2054, T.E.&L. Sur. Drlg. 2,293 ft.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Drlg. 4,423 ft.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. S.D. 3,370 ft.; S.O. tstg. after acd. 3,377 ft.

Haskell County

Amerada Pet. Corp. No. 1 Kleiner, J. M. Cass Sur. S.D.R. 5,026 ft.

Jones County

A. B. Bissey No. 1 Mary Spurrier, Sec. 6, Blk 1., W. C. Walker Sur. Drlg. 1,925 ft.
Geo. Callihan No. 1 Prewitt, Sec. 32, B. B.B.&C. Sur. S.D.R. 2,065 ft.
Ed. L. Evans No. 1 B. J. Crier, Sec. 8, B.A.L. Sur. S.D.O. 1,765 ft.
Gillespie et al No. 1 J. D. Samples, Sec. 45, Deaf and Dumb Asylum Lds. Drlg. 1,700 ft.
Gregg Oil Co. No. 1 S. R. Osment, Sec. 51, B.B.B.&C. Sur. S.D. 1,883 ft.
S. C. Herring No. 1 Guitar Est., western part of E. Sieverman Sur. No. 12. D.& A. 2,245 ft.
C. W. Snoddy No. 1 Chas. Stephens, Sec. 35, Orphans Asylum Lds. Fsg. 2,105 ft.
A. H. Tarver No. 1 A. S. Barkley, Sec. 54, Deaf and Dumb Lds. Drlg. 1,570 ft.
Tarver Pet. No. 1 Swanson, Sec. 184, B. B.B.&C. Sur. Drlg. 2,805 ft.

Palo Pinto County

Allen & Ritchie No. 1 fee, J. Pitts Sur. No. 1278. T.D. 1,472 ft.; S.I. with 10,000,000 cu. ft. gas.
Palo Pinto O. & G. Co. No. 2 Rector, Sec. 65, Burleson C.S.L. Sur. Rng. csg. 3,050 ft.
Wilkerson No. 1 McPherson, S. P. Ross Sur., Abst. 839. Drlg. 2,200 ft.
Wilson No. 1 F. M. Watson, Sec. 10, Blk. 2, T.&P. Sur. Mch.

Parker County

Brown-Gardner Bros. No. 1 Gilbert, T.& P. Sur., Abst. 1958. S.D. 2,200 ft.

Shackelford County

Beams Drlg. Co. No. 1 Jackson, Sec. 85, Blk. 12, T.&P. Sur. S.D.O. 1,215 ft.

EAST TEXAS

(Border Counties)

Harrison County

Ark. La. Gas Co. No. 1 Crawford, 25-ac. tr., A. D. S. Coy Sur. Set 9⅝-in. csg. 2,040 ft.
J. A. Hughes No. 1 Taylor, H. McNutt Sur. Drlg. 1,290 ft.

Marion County—Rodessa

Texas Co. No. 4 Broden, J. M. Fitzgerald Sur. Drlg. sh.&L. 3,240 ft.
Texas Co. No. 4 Chatten, 467 ft. WL, 2,050 ft. NL lse., Wm. R. Meyers Sur. Drlg. sh.&L. 3,647 ft.

Marion County—Other

Geo. Echols No. 1 C. W. Ray, 16-ac. tr., John Hanks Sur. R.U.

Panola County

Paul Pewitt No. 1 Rushing Est., Mannon Smith Sur. Drlg. 5,700 ft.
Turner & Smith No. 1 J. W. Bird, G. Gillespie Sur. T.D. 4,985 ft.; blew out; making gas; S.I.; cond. mud.

Shelby County

Earl McDaniel No. 1 C. W. McDaniel, Wm. Snider Sur. Cg. 5,891 ft.

Canadian Fields

(Continued from Page 78)

ville crude appears well suited. It is not yet certain whether the field will be primarily oil or gas. If the latter, production, which is sweet gas, may be used to supplement the Canadian Western supply for Calgary, or may be piped to Moose Jaw and Regina in southern Saskatchewan. With Diesel-rotary equipment Anglo-Canadian No. 2 was drilled to the lime in about three weeks. No attempt will be made to deepen or acidize, as the lime formation is very porous.

Anaconda Oil Co. No. 1, LSD 15, Section 9-22-12w4, in the north end of the field, standing at 2,420 ft., is preparing to change to rotary and deepen to the lime, which is expected around 3,000 ft.

Jumping Pound Test

On the Jumping Pound structure west of Calgary, Rabson Oil Co., a subsidiary of the Brown-Moyer-Brown group, has leased approximately 3,000 acres from Roxana Petroleums, and is planning to spud No. 1 test before June 1. The Roxana company receives a cash payment with 5 per cent gross royalty on production. If No. 1 gets commercial production, the Rabson company will drill one well on each subdivision of the 3,000 acres which is checkerboarded across the structure. The Roxana company retains approximately 4,700 acres. Drilling will be west of the Imperial Oil Co. wells, which, according to Dr. G. S. Hume, are comparable with the isolated dry tests drilled too far east on the Turner Valley structure.

California Oil Field Development

Fifty-eight wells were completed during the month with an initial daily production of 53,034 bbls., compared with 61 wells completed during February, with an initial production of 40,742 bbls.

Group No. 1—	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells: Drillers	Abd. wells: Producers
Arvin	3	1	..	.....	1	..	..
Belridge—North	2	4	2	610	63	..	..
Belridge—South	1	1	..	.....	88	..	..
Canal	1	2	..	.....	19	..	..
Canfield Ranch	..	..	..	.....	1	..	..
Coalinga	1	13	2	6,884	773	6	1
Cole's Levee	1	3	1	602	2	..	..
Edison	..	..	..	.....	88	..	..
Elk Hills	..	..	..	.....	169	..	..
Fruitvale	3	3	..	.....	173	..	1
Greeley	1	5	..	.....	14	..	..
Kern River	3	7	1	10	1,293	..	1
Kettleman Middle Dome	..	..	..	.....	3	..	..
Kettleman North Dome	3	11	1	1,791	211	..	..
Lost Hills	..	1	..	.....	245	1	..
McKittrick	1	3	..	.....	198	..	..
Midway-Sunset	2	4	2	162	2,516	..	8
Mountain View	..	..	..	.....	179	..	1
Mount Poso	2	1	1	496	277	1	..
Rio Bravo	1	3	..	.....	27	..	..
Round Mountain	..	3	..	.....	203	..	..
Ten Section	1	1	1	2,863	29	..	..
Tupman	..	1	..	.....	1	..	..
Wasco	..	2	1	3,587	4	..	..
Wheeler Ridge	..	..	..	.....	33	..	..
Group No. 2—							
Capitan	..	1	..	.....	48	..	..
Elwood	..	..	..	.....	81	..	..
Rincon	..	..	1	486	52	..	..
San Miguelito	..	2	1	2,684	20	..	..
Santa Barbara	..	..	..	.....	26	..	5
Santa Maria	..	2	4	3,465	307	..	1
Summerland	..	1	..	.....	18	..	..
Ventura Avenue	2	10	..	.....	269	..	..
Ventura-Newhall	2	8	1	1,200	551	1	1
Watsonville	..	..	..	.....	7	..	..
Group No. 3—							
Brea-Olinda	..	..	..	.....	351	..	..
Coyote—East	..	..	..	.....	86	..	..
Coyote—West	..	1	..	.....	51	..	..
Dominguez	1	2	1	737	179	..	..
El Segundo	..	..	..	.....	51	..	..
Huntington Beach	1	4	2	643	544	..	2
Inglewood	..	..	..	.....	210	..	..
Lawndale	..	..	..	.....	6	..	..
Long Beach	..	..	..	.....	1,254	..	..
Los Angeles-Salt Lake	..	..	..	.....	112	..	..
Montebello	5	15	2	1,400	232	..	..
Playa Del Rey	..	..	..	.....	185	..	..
Potrero	..	1	..	.....	14	..	..
Richfield	1	1	..	.....	295	..	1
Rosecrans	2	4	3	1,232	124	..	..
Santa Fe Springs	..	..	..	.....	576	..	4
Seal Beach	1	1	..	.....	104	..	1
Torrance	17	21	12	4,895	702	..	1
Whittier	..	..	..	.....	150	..	..
Wilmington	7	9	17	19,287	617	..	..
Miscellaneous drilling	8	24	..	.....	.....	10	..
Group No. 4—gas fields—							
Buena Vista Lake	..	..	..	.....	4	..	..
Buttonwillow	..	..	..	.....	25	..	..
Delano	..	..	2	Gas	.....	..	..
McDonald Island	..	..	..	.....	6	..	..
Rio Vista	..	..	..	.....	22	..	..
Semi-Tropic	..	..	..	.....	15	..	..
Tracy	..	..	..	.....	5	..	..
Total March	73	176	58	53,034	13,909	19	28
Total February	86	178	61	40,742	13,876	8	14
Increase	*13	*2	*3	12,292	33	11	14

*Decrease.

CALIFORNIA RESERVES

(Continued from Page 37)

total of 1,590 feet of similar sandstone and shale were penetrated by No. 2 Weyl-Zuckerman between 5,245 feet and 6,835 feet. The McDonald Island sand is regarded as of Martinez age. The Cretaceous was reached by No. 2 Weyl-Zuckerman. Top of the Cretaceous has been placed at 6,835 feet and a good Cretaceous (Garza) fauna is present at 7,162 feet. The Cretaceous consists of foraminiferal dark-gray to brown shale with fish scales and carbonaceous material, interbedded with fine gray sands.

Tracy Gas Field

The Tracy gas field, of San Joaquin County, the first commercial gas field found in the northern part of the state, is in the extreme northwest portion of the San Joaquin Valley about 20 miles southwest of Stockton and near the town of Tracy. It was located by a seismograph survey carried on by Amerada Petroleum Corp., which drilled the discovery well in Section 15-2s-5e. Six commercial gas wells have been completed and two dry holes abandoned, one being drilled by Holly Development Co. on the Padden lease in Section 16-2-5. All of the productive acreage is held by Amerada Petroleum Corp. The total gas reserve of the Tracy gas field is relatively small compared with some of the other gas fields, as Tracy contains only about 600 acres of productive land. This means the spacing program is one well to each 100 acres. Production has been developed in portions of Sections 15-2-5 and Section 22-2-5. The natural gas produced contains a calorific value of 935 B.t.u. The Tracy gas field is connected with the Stanpac major trunk by a 6-inch line and this in turn is connected at Milpitas with the main trunk of Pacific Gas & Electric Co.'s natural-gas transmission line, which extends northward from Kettleman Hills and Buttonwillow in the San Joaquin Basin to the San Francisco Bay region.

Goleta Gas Field

The Goleta gas field of Santa Barbara County is on the coast line of the Pacific Ocean at the mouth of Goleta Slough, about 4 miles east of the Elwood oil field, and is one of several structures within the belt of folding which extends along the seacoast from Carpinteria to Point Conception, parallel to the south flank of the Santa Ynez Range.

Five wells have been completed in the main field and one has been completed about mile southwest on the westerly plunge of the anticline where structural conditions are not well understood. Dry holes have been drilled on the north and south flanks of the structure.

Goleta Geology

The Goleta structure is an asymmetric anticlinal dome complicated by overthrust faulting along the crest. A fault with a displacement of about 1,000 feet, downthrown on the north, parallels the axis on the north flank and probably limits the production on that side. The structure as shown on the accompanying map is based on a combination of surface mapping and subsurface information. The formation exposed at the surface is diatomaceous Monterey shale of Miocene age. Wells reach the base of this formation at about 2,300 feet and enter the clay shales of the Temblor, which are approximately 1,800 feet in thickness. These overlay the Vaqueros sandstone (lower Miocene) which is 350 feet thick and is the gas-producing horizon of the field. The Sespe formation is encountered at about 4,500 feet and has been completely penetrated by one well in which it had a thickness of 2,380 feet. It consists of reddish clays and silts and greenish to gray clay shales and sands, in greater part, if not wholly, of nonmarine origin. The oldest formation reached by any well drilled in the field is the Tejon sandstone.

Production

The Vaqueros, a medium-grained, fairly well indurated gray sandstone with about 15 per cent porosity, is the reservoir rock, and on top of the structure is filled with gas throughout its entire thickness. Several wells have had strong gas showings and one well is producing the gas from the fractured shales of the Temblor. Although no water is known to exist above the Vaqueros, wells are finished with a primary water string at the top of this horizon. Some wells are completed with perforated liner, while others are produced barefoot through tubing landed inside the water string. Initial production of wells in good mechanical condition and with the entire thickness of Vaqueros open to production ranges from 35,000,000 to 60,000,000 cu. ft. per day. Initial reservoir pressure was 1,800 pounds per square inch. Pressure does not decline rapidly, and it is believed that, due to the very slow rate of gas withdrawal, the reservoir pressure is held up by the encroachment of edge water on the flanks of the fold. The gasoline content of the gas is about 0.30 gallon per 1,000 feet of gas. A small amount of condensate of about 60 degrees gravity is produced with the gas. A tar seep exists on the bench on the southeastern flank of the Goleta structure where faulting is in evidence in the surface rocks. The Monterey shales exposed along the axis and on the south flank of the fold are coated with tar on their fractured surfaces. No showings of oil have been noted in the Vaqueros in any well so far drilled in the field. The upper part of the Sespe, in the one well drilled through this formation, contained numerous sands showing some oil saturation. However, production tests made on the best of these showings failed to develop commercial production. The proved productive area of the Goleta field is about 250 acres; however, the limit of production on the ends has not been defined. To the end of 1938 the field had produced 14 billion cubic feet of gas. The data on the Goleta gas field was prepared by R. O. Swayze, of General Petroleum Corp., for the Division of Mines bulletin on "Geological Formations and Economic Development of California Oil and Gas Fields," and is published herewith with the permission of Olaf P. Jenkins, state geologist.

GOLETA GAS FIELD
Santa Barbara County

Company—	Well number	Location S.T.R.	Depth Total	Depth Effective	Status	Initial production M.c.f.	Date completed
General Pet. Corp.	1 More	21-4-28	4,533	Same	Discovery well	58,000	September 19, 1929
General Pet. Corp.	2 More	21-4-28	4,343	Same	Gas well	8,295	December 1, 1931
General Pet. Corp.	3 More	21-4-28	6,912	4,346	Gas well	32,000	February 26, 1932
Shell Oil Co.	1 Bishop	20-4-28	6,508	4,170	Gas well	17,000	April 4, 1935
Shell Oil Co.	1 Hollister	10-4-29	2,977	1,036	Abandoned	None	September 30, 1935
Shell Oil Co.	2 Hollister	10-4-29	3,819	Same	Abandoned	None	November 25, 1935
Standard Oil Co.	1 Chase & Bryce	20-4-28	4,397	Same	Gas well	46,000	September 16, 1933
Standard Oil Co.	2 Chase & Bryce	17-4-28	4,850	2,870	Gas well	8,700	January 31, 1935

WELLS DRILLED IN McDONALD ISLAND GAS FIELD
San Joaquin County, California

Company—	Well number	Location S.T.R.	Depth Total	Depth Effective	Status	Initial production M.c.f.	Date completed
Standard Oil Co.	1 McDonald Island	24-2-4	5,227	Same	Discovery well	26,600	June 2, 1936
Standard Oil Co.	2 McDonald Island	19-2-5	5,712	Same	Abandoned	None	December 12, 1936
Standard Oil Co.	3 McDonald Island	24-2-5	5,337	Same	Gas well	7,150	May 2, 1937
Standard Oil Co.	1 Mabry	31-2-5	5,313	Same	Gas well	26,150	September 30, 1936
Standard Oil Co.	1 Tilden	31-2-5	5,312	Same	Gas well	26,500	February 27, 1937
Standard Oil Co.	1 Weyl-Zuckerman	25-2-4	5,273	Same	Gas well	24,700	August 7, 1936
Standard Oil Co.	2 Weyl-Zuckerman	25-2-4	8,810	5,279	Gas well	6,400	March 18, 1938

WELLS DRILLED IN TRACY GAS FIELD
San Joaquin County, California

Company—	Well number	Location S.T.R.	Depth Total	Depth Effective	Status	Initial production M.c.f.	Date completed
Amerada Pet. Co.	1 F.D.L.	15-2-5	9,690	4,070	Gas well	5,000	January 7, 1936
Amerada Pet. Co.	2 F.D.L.	15-2-5	4,063	Same	Discovery well	35,000	August 11, 1935
Amerada Pet. Co.	3 F.D.L.	15-2-5	4,029	Same	Gas well	65,000	January 6, 1936
Amerada Pet. Co.	4 F.D.L.	15-2-5	4,050	Same	Gas well	35,000	February 9, 1936
Amerada Pet. Co.	5 F.D.L.	15-2-5	6,160	4,025	Gas well	25,000	March 10, 1936
Amerada Pet. Co.	31-22 Tracy	22-2-5	4,133	4,060	Gas well	33,800	October 24, 1935
Amerada Pet. Co.	11-23 Tracy	23-2-5	5,107	Same	Abandoned	None	December 18, 1935
Holly Dev. Co.	1 Padden	16-2-5	4,125	Same	Abandoned	None	May 16, 1936

SEUBERT

(Continued from Page 39)

The net worth of the investment of Indiana stockholders, after counting out the obligations to others, is 663 millions of dollars, equal to $43.39 per share or about $6,640 per average stockholder. The stockholders have an investment of a value of $22,141 in the enterprise for every employe. This compares with a figure of $18,400 for the oil industry as a whole and illustrates the relatively large amount of capital involved in keeping every job going in the oil industry and particularly in our organization.

Owners—Who Are They?

Incidentally, who are the owners of these assets with which we work? A count made last year showed that they included in addition to 49,766 men and 42,679 women the following institutions: 57 charitable organizations, 46 churches and other religious organizations, 27 civic bodies, 12 libraries and museums, 38 hospitals, 71 educational institutions, 12 research societies, 89 insurance companies, 1,529 other corporations and partnerships, 4,598 trusts and trusteeships, and 1,790 other fiduciaries. The interests of the corporation are interests of a vast number of people, all of whom depend on employes to guard the principal of their investment and make it earn a fair return.

Taxes to Support 48,742 Persons

The excise taxes collected and accounted for by Indiana and subsidiaries in 1938 amounted to $92,824,345. Other taxes imposed directly, such as real estate, personal property, crude production, transportation, capital stock, state income, federal income and other levies, totaled $14,660,860. The total of both, $97,485,205, compares with a record of $103,924,580 established in 1937. Naturally, the decline in sales brought a decline in gasoline taxes collected and both the decrease in profits and changes in the tax laws made a difference in income taxes paid or accrued.

To make clear just how large a cut taxes make in the customer dollar we collect, our 1938 total was sufficient to pay salaries at an annual rate of $2,000 to 48,742 government workers. We cannot say that our 30,000 employes are paying salaries of that many government employes, because the money comes chiefly from buyers of our products. But where would the taxes come from if we were not providing the products and the business activities to be taxed? Our industrial activity is certainly carrying its full share of the tax load—if not more than its share. I hope the day will come when the burden will be lightened so that employes, stockholders and customers can get a little more out of the operations of this business without having to collect so large an assessment for government.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1939 High	1939 Low	Week ending May 20 High	Week ending May 20 Low	Week ending May 20 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1938	Com. sh. earn. 1937	1938 High	1938 Low	1937 High	1937 Low
69½	50	64¼	62½	63½	Amerada Corp.	788,675	N.P.	50cQ	1-31-39	$2.00	$2.07	$3.04	78	55	111⅞	51½
23½	18½	20⅛	19⅜	19¾	Atlantic Refining	2,663,999	$25	25cQ	6-15-39	1.00	1.40	3.51	27⅜	17¾	37	18
21½	10⅞	13¾	12⅛	12½	Barber Asphalt Co.	390,223	$10	75c	12-16-37	....	—.85	1.91	23¾	12⅛	43⅜	10⅛
19½	12⅜	14⅛	13½	13½	Barnsdall Oil Co.	2,250,344	$5	25cQ	2-1-39	1.00	1.26	.85	21⅜	10⅛	35¼	10
9¼	7	7⅝	7¼	7½	Consolidated Oil Corp.	13,751,846	N.P.	20cQ	5-15-39	.80	.55	1.48	10¾	7	17⅞	7
31½	21⅛	23⅜	22	22⅛	Continental Oil of Delaware	4,682,581	$5	25cQ	6-27-39	‖1.00	1.10	2.98	35¾	21¼	49	24
8¾	4⅞	6¼	5⅝	5¾	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	.83	.94	9¾	5	17⅝	4¾
20¼	12⅜	14½	14⅜	14⅜	Lion Oil Refining	435,815	N.P.	25cQ	4-20-39	1.00	2.09	2.17	25½	15⅝	34	12½
16½	11⅛	13¾	13	13⅜	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-39	.60	.56	2.86	22⅝	12¼	35⅜	14
14⅞	10⅜	11½	11½	11½	Mission Corporation	1,379,245	$10	$1	6-29-38	1.00	1.04	1.31	17¾	10⅝	34	15
15½	6½	8⅝	8	8	National Supply	1,155,517	$10	$2 pf.‡	12-22-37	....	—.79	4.90	23	12½	41⅜	17⅝
7⅛	7	7½	7	7¼	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	.20	.25	1.30	14⅞	8⅞	22⅞	8
34¾	27½	9⅞	9⅞	9⅞	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	.50	1.22	1.39	15⅞	10¼	29¾	11¾
6¾	5½	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	....	.08	1.18	9¼	6¼	17⅛	7
43¾	31¼	35⅝	34½	35¼	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-39	‖2.00	2.03	5.42	44⅝	27¼	64	30⅛
22½	17¼	20⅜	18⅞	20⅜	Plymouth Oil Co.	1,006,200	$5	35cQ**	6-30-39	1.40	2.59	2.85	25⅝	15	29⅞	13
11¼	7	7⅞	7½	7½	Pure Oil Co.	3,982,031	N.P.	25c	12-1-37	....	.38	2.15	13½	8¼	24⅜	8¾
10¼	6⅝	8¼	7½	7⅝	Richfield Oil Corp.	4,010,000	N.P.	50c	12-21-38	.50	.51	.35	9⅞	5	6½	4⅛
22⅜	16⅛	18½	17½	18	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-15-39	1.00	1.52	1.97	27½	15½	54⅛	16
15⅛	10⅝	11⅛	10⅝	11⅛	Shell Union Oil	13,070,625	N.P.	35c	12-20-38	.70	.72	1.44	18⅜	10	34⅜	14⅞
29½	18½	19	18⅝	18⅞	Skelly Oil	995,349	$15	50c	12-15-38	1.00	2.27	6.07	34¾	18½	60⅝	26½
13¾	10½	12⅛	11⅝	11⅞	Socony-Vacuum	31,206,071	$15	25cSA	3-15-39	.50	1.29	1.82	16⅜	10¾	23¼	13
30½	25¼	26⅛	25½	25⅝	Standard Oil of California	13,004,153	N.P.	30cQ†	3-15-39	1.40	2.22	3.17	34⅞	25⅛	50	27⅛
29⅛	23¼	25¼	24¼	25⅛	Standard Oil (Indiana)	15,272,020	$25	25cQ	6-15-39	1.00	1.82	3.66	35½	24¾	50	26½
50⅝	46	..	..	..	Standard Oil of Kansas	106,190	$10	$2	12-8-38	2.00	5.25	6.93	50⅛	32½	43	30⅝
53¼	42½	46½	42½	42⅝	Standard Oil of New Jersey	26,618,065	$25	50c§	12-15-38	$1.50	2.86	5.64	58⅜	39¾	76	42
66	46	52¼	51½	52⅛	Sun Oil	2,316,484	N.P.	25cQ	6-15-39	1.00	1.07	3.86	65⅛	45	77½	44½
3¼	2	2⅛	2	2	Superior Oil Corp.	1,388,079	$1	10c	12-28-38	.10	.24	.32	4¼	1¾	7¾	1½
48¼	35	38¾	36¾	38¾	Texas Corp.	10,876,882	$25	50cQ	4-1-39	2.00	2.13	5.02	49⅝	32⅝	65⅛	34¾
5⅜	3½	4¼	3¾	3⅞	Texas Gulf Producing Co.	888,142	N.P.	10c	6-15-39	.15	.86	.68	5⅞	2⅝	9⅝	2
10⅛	7½	7⅞	7⅝	7⅝	Texas Pacific Coal & Oil	888,236	$10	10c	6-1-39	.40	1.16	1.11	12½	7	16⅝	5⅜
14¼	11¼	12⅜	11¾	11¾	Tide Water Associated	6,375,253	$10	25c	6-1-39	1.00	1.28	2.08	15¾	10⅛	21⅝	13⅛
19¾	16¼	17	16½	16⅞	Union Oil of California	4,666,270	$25	25c	5-10-39	1.20	1.47	2.58	22½	17⅛	28¼	17½
23⅝	20⅛	20½	20½	20½	Union Tank Car Co.	1,177,381	N.P.	30cQ	3-1-39	1.30	1.16	1.70	23½	20	31½	22
3¾	2½	3¾	2⅞	3⅛	Wilcox Oil & Gas	487,568	$5	....	5-10-28	....	.52	.24	3½	1⅝	6¼	1¾

*Payable in 3½ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1½ per cent stock dividend. ‖Also right to subscribe to bonds. ¶Also 1 per cent in stock. **Also 2 per cent in stock. —Deficit.

New York Curb Exchange

1939 High	1939 Low	Week ending May 20 High	Week ending May 20 Low	Week ending May 20 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1938	Com. sh. earn. 1937	1938 High	1938 Low	1937 High	1937 Low
9	5½	7⅜	7	7	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.10	—$0.22	$0.27	11¾	5	10	6⅝
7¼	3½	4⅛	3⅜	3¾	Bridgeport Machine Co.	270,000	N.P.	$1.25	12-30-37	....	—.14	1.90	10¼	4⅞	21⅜	7
34¾	27¼	32¼	32	32¼	Buckeye Pipe Line Co.	200,000	$50	50c	3-15-39	2.00	2.36	4.02	39	22½	51½	36
130	110	114	112¾	114	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-26-39	6.50	5.32	6.73	128	97	112	95½
9¼	5⅞	6¼	5⅞	6	Cities Service (new)	3,704,067	$10	....	6-1-32	....	.23	1.02	11	5⅛	5⅝	1½
1⅛	½	1⅛	1	1	Cosden Petroleum	462,551	$1	....	.....	....	....	.19	2⅝	⅞	5½	1⅛
23⅜	17½	21	20¼	20⅜	Creole Petroleum	6,975,383	$5	50cSA†	6-15-39	1.00	1.64	1.61	27½	17½	38⅜	20¼
7⅛	5	..	..	..	Darby Petroleum	351,390	$5	25cSA	1-15-39	.50	....	1.36	10¼	5½	18⅝	6½
2¼	1⅝	2¼	2¼	2¼	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.91	1.34	3½	1½	8⅜	2¼
20	17½	16¼	15⅜	16¼	Eureka Pipe Line	50,000	$50	50c	2-1-39	3.00	—.37	—.12	31	16	47½	24½
40	29¼	33	31¾	32¾	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-39	1.00	1.43	3.51	46⅞	33	63½	33
69⅜	53	56¼	55¼	55½	Humble Oil & Refining	8,987,840	N.P.	37½c	7-2-39	3.00	3.98	5.22	72⅝	56	87	54⅞
17	14⅜	16⅜	16⅜	16½	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-39	1.25	.96	.98	19½	14⅛	24¼	14½
7	5⅝	6¼	6⅛	6¼	Indiana Pipe Line	300,000	$10	30c	5-15-39	.50	.47	1.03	9⅜	6	15	5⅜
27½	22⅜	25⅞	25½	25½	International Petroleum	14,324,088	N.P.	1.00†‡	6-1-39	2.50	1.98	....	31¼	21	39½	23½
3½	2¼	2⅜	2⅜	2⅜	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	.10	.14	.17	5	2⅛	8⅜	2⅝
9½	7⅛	9⅛	8⅞	9⅛	Lone Star Gas	5,553,747	N.P.	20c	4-20-39	.60	.88	1.14	10⅜	6⅝	14¼	5¼
7¾	4⅞	6	5⅝	5¾	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	3-15-39	.45	.45	.58	9⅜	6½	15¼	6¾
17	15	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	4-10-39	1.00	2.28	3.26	24	16	33½	17
8¾	7	7⅞	7¾	7¾	Midwest Oil Co.	998,474	$10	50c	12-15-38	1.00	.93	1.14	9¾	6⅝	14⅝	6¼
5½	4⅞	5½	5¼	5⅜	Mountain Producers	1,593,584	$10	30cSA	6-15-39	.60	.62	.76	5⅜	4½	7⅞	4⅛
13¼	11¼	12¼	11⅞	11⅞	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-39	1.00	.84	.96	14⅝	11½	19½	12
8½	7¼	8⅜	8	8	National Transit	509,000	$12.50	35c	6-15-39	.75	.88	1.19	9¼	6½	12½	7¼
1¾	1½	1⅝	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.02	.02	2⅝	1½	5	1⅛
4⅞	4	..	..	..	New York Transit	100,000	$5	15c	4-15-39	.25	.16	.49	4½	3½	5⅜	3⅞
5¾	4½	..	..	..	Northern Pipe Line	120,000	$10	15c	6-1-39	.35	.24	.78	6	4	12¾	5¾
7⅝	4¼	5¾	5⅜	5⅜	Pantepec Oil	2,857,000	$1	....	.....	....	....	....	7¾	3½	9⅝	2⅜
2¾	1¼	2¼	2⅛	2¼	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.17	—.17	4½	1⅝	12¾	2
2¾	1¼	..	..	..	Ryan Consolidated	298,931	N.P.	....	.....	....	.29	.46	4	2⅛	6½	2¼
4	3½	3½	3½	3½	Southern Pipe Line	100,000	$10	15cSA	3-1-39	.30	—.27	.85	5⅜	3¼	7¼	3⅞
34⅞	27⅜	29¼	29¼	29¼	South Penn Oil	1,000,000	$25	37½cQ	3-31-39	1.75	1.44	4.64	39	28¾	56	35
19	17	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	4-1-39	2.00	—.41	.95	22¼	16½	42	20
18¾	17¼	18	17⅝	17¾	Standard Oil of Kentucky	2,604,790	$10	25c	6-15-39	1.25	1.45	1.60	18¾	15	21⅛	17¾
10½	6	8	7½	7¾	Standard Oil of Nebraska	161,403	$25	25c	3-29-37	....	—.69	—.58	8¾	5½	13¾	8
21½	17	18¼	17¾	18	Standard Oil of Ohio	753,740	$25	25c	3-15-39	1.00	1.81	3.67	22¾	16¼	45	16
2⅝	1⅞	2⅛	2	2	Sunray Oil	2,007,076	$1	5c	4-27-39	.05	.23	.42	3¼	2	4⅞	2
4	2⅜	2⅞	2⅜	2⅞	Texon Oil & Land	936,024	$2	15cQ	9-30-38	.60	.56	.51	5¼	3½	7⅝	2
5½	2½	3½	3½	3½	Transwestern Oil Co.	750,000	$10	....	.....	....	—.12	.48	7⅝	4¼	13⅞	4⅝
3⅜	1⅝	2	1⅞	2	United Gas Corp.	7,818,959	$1	....	.....	....	—.51	.25	5¼	2⅝	13⅞	3

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock. —Deficit.

Personal Paragraphs

W. M. GRIFFITH and A. R. BUDD were added to the board of directors of Plymouth Oil Co. when stockholders at their annual meeting in Pittsburgh, Pa., last week approved increasing the number of members from 9 to 11.

C. C. DURKEE, superintendent of the Augusta, Kans., refinery of Socony-Vacuum Oil Co., for the past 15 years, has been transferred to Kansas City, Mo., where he will be superintendent of gasoline pipe lines and terminals, a newly created position. WILLIAM GLASS, formerly superintendent of the company's Casper, Wyo., plant, succeeds Mr Durkee as superintendent at Augusta. E. T. PUMMILL, formerly assistant superintendent at Augusta, succeeds Mr. Glass at Casper.

JOHN E. HOWELL, vice president of Lion Oil Refining Co., El Dorado, Ark., is serving as chairman of the Schuler operators committee in working out pressure maintenance plans for the field.

FELIX CHAPPELLET, with General Petroleum Corp. for the past 15 years, has been appointed Los Angeles branch manager, and G. F. WEISMANN has been advanced to district manager at Bakersfield.

LESTER G. METCALF, general manager of refining for Union Oil Co. of California, has been appointed manager of marine operations, succeeding WILLIAM GROUNDWATER, who resigned to enter private business.

W. H. COTREL, of the Texas Co., with offices in Los Angeles, Calif., has been appointed state superintendent, metropolitan division, of the company's sales department. His former position of assistant district manager of sales promotion has been filled by T. J. COCKRELL, heretofore superintendent of sales promotion.

DR. E. B. EVANS, recently elected to the council of the Institute of Petroleum, a British organization, has been for the past 13 years in the service of Anglo-American Oil Co. Originally in the Purfleet laboratory, he was among the first of the chemists on the staff of the present laboratory at Vauxhall, where for several years he was in charge of the fuel section of the laboratory department. Dr. Evans has served on several of the institute's standardization committees.

CHARLES RUSSELL BICKEL, acting manager of the Oklahoma producing division, Shell Oil Co., Inc., was appointed producing manager of the Kansas division last week, to succeed HENRY E. ZOLLER, who resigned to become executive vice president of Derby Oil Co. Mr. Bickel graduated from West Virginia and Oklahoma universities and started with Shell in 1927.

JOSEPH M. DAWSON, geologist in charge of the Gulf Oil Corp. office in San Antonio, Tex., will be transferred June 1 to the Corpus Christi, Tex., office which will be under his supervision. Mr. Dawson spent several years in South America before being stationed at San Antonio. E. R. EASTIN, scout for Gulf in the South Texas area, will remain in San Antonio in charge of the company's activities.

LON A. SMITH, chairman of the Texas Railroad Commission, went to Oklahoma City last Friday and conferred with GOV. LEON C. PHILLIPS, of Oklahoma, on southern freight rates.

ARTHUR R. CARMODY, of Shreveport, La., a vice president of North Central Texas Oil Co., Inc., was elected a director of that company last week to fill the vacancy created by the resignation of MILTON J. BUDLONG.

N. T. GILBERT, general manager of Midstates Oil Corp., Tulsa, has been appointed chairman of the budget and finance committee of the Independent Petroleum Association of America. He is also treasurer of the organization. T. F. BIRMINGHAM, president Margay Oil Corp., Tulsa, was appointed vice chairman.

HENRY L. DOHERTY, president of Cities Service Co., and Mrs. Doherty were honor guests at a luncheon and party held in the recreation auditorium of Sixty Wall Tower, New York, the company's headquarters, on the occasion of Mr. Doherty's sixty-ninth birthday. Employes of the Cities Service organization announced "The Henry L. Doherty Educational Foundation," to provide scholarships for children of the company's personnel. Management will be entirely in the hands of employe committees, and funds will be provided by voluntary subscriptions of members of the Cities Service organization.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

It is estimated that 400,000,000 cu. ft. of gas is being wasted in the Cushing field every day.

Lakeview No. 2 Oil Co. No. 1 well, in the Maracaipo field in California (Section 4-11-23), is estimated to be good for 50,000 bbl. a day. The well was started three years ago and only completed, in sand at 3,033 ft., on May 10, 1914.

20 YEARS AGO

Prairie Oil & Gas Co. earned $112 per share in 1918 as against $56 in 1917. The company had a profit and loss surplus of $70,443,441 at the close of 1918. The stock ($100 par) is quoted at $770 per share on the market.

Three years ago J. M. Saunders, a young shoemaker invested $300 in an oil and gas lease near Garber, Okla. In the past week Magnolia Petroleum Co. bought the lease and Mr. Saunders' share was $35,000.

The Ottawa government appears to have turned down the Royal Dutch-Shell's latest application for extensive oil concessions in western Canada, by tabling it in parliament.

F. Julius Fohs will leave New York soon for Palestine where he will make a geological survey. W. H. Foster will accompany and assist Mr. Fohs.

10 YEARS AGO

A 300-bbl. well in the old Lawrenceville field and two 200-bbl. wells in St. Clair County, featured Illinois operations in the past week. Two wells in Gray County, Texas Panhandle, flowed 18,725 bbl. initially.

The largest producer in Oklahoma is Prairie Oil & Gas Co. and the largest in Texas is the Gulf Production Co., according to the tax reports for the first quarter of 1919.

The Seminole field (nine pools, including St. Louis) has passed the 400,000,000-bbl. mark in total production.

RAYMOND E. NEAL, manager of the Hugo, Okla., district for Community Natural Gas Co., has been elected president of the Hugo Rotary Club.

LON HUDDLESTON, Wichita Falls, Tex., has resigned from the scouting department of Shell Oil Co., Inc., to enter business for himself as an independent operator.

B. F. PICKARD, president of Central States Power & Light Corp. for the past five years, was elected president of Interstate Power Co. at a meeting of the directors in Dubuque, Iowa. He succeeds JAMES F. ORR, who resigned because of ill health.

F. V. GORDON, president of Loscal Petroleum Co., Los Angeles, Calif., and director of several other oil companies, visited Tulsa and other Mid-Continent points last week. Mr. Gordon is one of the veteran independent operators of California, his first operations in that state dating back to the turn of the century.

W. C. ADAMS has been transferred from the Tulsa office of Deep Rock Oil Corp. to Houston, Tex., where he will have charge of a branch office opened by the company. H. L. STEGALL, previously located in Lafayette, La., also has been transferred to Houston, from which point he will serve as scout and land man in the Louisiana and Gulf Coast territory. HENRY N. GREIS, trustee for Deep Rock, announced that in addition to these shifts, the Tyler, Tex., office would be closed and the personnel would be transferred to Houston.

T. M. MADDEN, district scout for Shell Oil Co., Baton Rouge, La., has resigned to enter other business.

W. A. McKENNA, district scout and land man for Gulf Oil Corp., New Orleans, La., has resigned to engage in the oil business independently.

ROBERT L. HAND, vice president and general manager of the marine department of Standard Oil Co. of New Jersey, has been elected to the board of the American Merchant Marine Institute.

A. M. HUGHES, vice president Phillips Petroleum Co., Bartlesville, Okla., headed a party of company officials from that city at a picnic given for company employes at Borger, Tex., last Saturday.

A. M. LLOYD, district geologist for Sun Oil Co. in Shreveport, La., was the principal speaker at a recent meeting of the Shreveport (La.) Geological Society. His subject was "Surface Geology of Rapides and Vernon Parishes."

V. M. KIRK, who recently sold his refinery in Cody, Wyo., is preparing to enter Montana oil development in partnership with ROY TARRANT, largest individual operator in the Cut Bank, Mont., field. Mr. Kirk has production in the Frannie field, in northern Wyoming.

PAUL WEAVER, who heads the geophysical department of Gulf Oil Corp. in Houston, Tex., was guest speaker at the monthly meeting of the South Texas Geological Society in Corpus Christi last Friday. He discussed "Chemistry of Ground Water—What Oil Geologists Can Learn from It and How It Affects the Formation and Exploration of Oil Fields."

Can't Help Being Young

Paul Ryan, last week elected president of National Refining Co., is only 39, but he can't help that. He was born in Philadelphia, Pa., where his father, Michael J. Ryan, was a well-known attorney and active in Pennsylvania politics. After graduating from the University of Pennsylvania, in Philadelphia, Paul went to Cambridge, Mass., where he entered the Harvard University school of business administration and the Massachusetts Institute of Technology. The legerdemain by which he managed to appear at his classes at both institutions was a subject of astonished comment.

PAUL RYAN

Shortly after completing his graduate work he became chemist for Skelly Oil Co. at its Wynona, Okla., plant. Following this he was technical man for Chestnut & Smith, Tulsa. Then, in 1927, he handled butane sales for Warren Petroleum Co., Tulsa. Next he joined Shell Petroleum Corp., St. Louis, Mo. He developed its propane and butane sales and in 1931 was placed in charge of sales promotion and advertising. He resigned to establish a sales engineering organization in New York, which handled radio campaigns for Sinclair Refining Co. and Pure Oil Co.

In 1929 Mr. Ryan married Miss Angela Connelly, of Bradford, Pa. They have three children and reside in Larchmont, N. Y. Before his advancement to the presidency of National Refining Mr. Ryan was assistant to Edgar G. Hill, whom he succeeds.

M. C. McGEE, president of Texas Gulf Producing Co., Houston, Tex., is on vacation in the mountains of Wyoming.

WILLIAM N. BONNER is president and general counselor for the Columbia Pipe Line Co., which has opened offices in Houston, Tex.

W. T. WALLACE, vice president of Gulf Oil Corp. and head of the New York producing division, sailed from New York recently for Venezuela.

T. E. SWIGART, vice president, Shell Oil Co., Houston, Tex., has been appointed a cosponsor for Houston of the National Recreation Association of New York.

FRANK EDWARDS has been chosen president of the newly organized Sound Cities Gas & Oil Co., Inc., Seattle, Wash. The company, it is reported, will start drilling development.

E. OSPINA-RACINES, formerly vice consul of Colombia in New York and now assigned to a government petroleum executive position in the Ministry of National Economy, has returned to Colombia.

S. G. GREENBERG is president, and W. M. QUICK vice president of the recently organized Quick Development Co., which has opened offices in Houston, Tex. The company is engaged in the development and production of oil.

B. E. SIBLEY, chief technologist for the Continental Oil Co., Ponca City, Okla., has been named chairman of the fuels and lubricants meeting at the World Automotive Engineering Congress of the Society of Automotive Engineers, being held in New York this week.

RILEY MAXWELL, geologist for Merry Brothers & Perini, Inc., and Oil States Exploration Co., has been elected president of the newly organized Abilene (Tex.) Geological Society. CARL S. SHOULTZ, consulting geologist, was chosen vice president, and GENE BOEHMS, chief geologist for Forest Development Corp., secretary-treasurer.

M. G. POWERS, secretary of Bed Rock Petroleum Co., is chairman of arrangements for celebration June 8 of the twentieth anniversary of the discovery well in the Johnson-Magoffin field, in eastern Kentucky. Bed Rock drilled the well which touched off a boom in 1919. Other members of the committee are W. H. KEFFER, Ashland Oil & Refining Co.; EARL D. WALLACE, Lexington, president Kentucky Oil and Gas Association; A. V. HOENIG, Bartlesville, Okla., and C. J. WIEDEMAN, Cumberland Petroleum Co. Well-known oil and gas operators, along with company officials, employes and friends of Bed Rock Petroleum Co., will attend. A big barbecue was held in September 1919 after the well had been shot and completed, and the forthcoming celebration will follow closely the pattern of the first one.

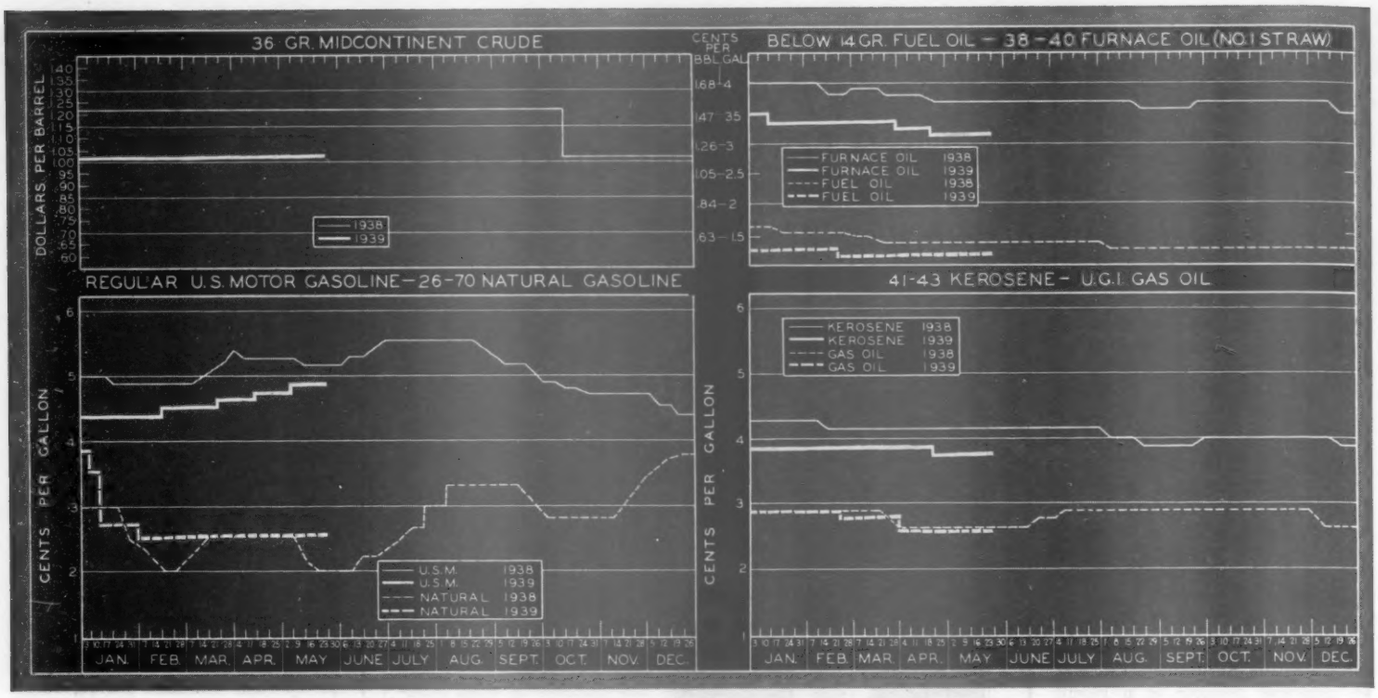
JOE C. MAXWELL, a director of the Texas Pacific Coal & Oil Co., has returned to his Fort Worth, Tex., offices after an extended vacation in South America and Africa, accompanied by Mrs. Maxwell.

C. J. R. MASON, of National Transit Co., will be the speaker Thursday, June 1, in the Club House, Oil City, Pa., at the last of the current series of "producer forum" meetings sponsored by the Pennsylvania Grade Crude Oil Association. At last Thursday's meeting PROF. PAUL H. GIDDENS, of Allegheny College, Meadville, Pa., reviewed early history of the Pennsylvania oil region.

GEORGE E. BURTON, district geologist for Sun Oil Co. in the West Texas and New Mexico district, with other members of the geological and scouting departments, will move from San Angelo to Midland about May 31. Personnel of the office which will move includes HANS WINKLER, geologist; H. F. PIERCE, stratigrapher; FRANK HERRINGTON, sample man; J. E. (ED) DICKINSON, district land man; C. M. CHASE, scout, and MISS RUTH WOODSON, stenographer.

W. J. HOLLOWAY, former governor of Oklahoma and representative of GOV. LEON C. PHILLIPS on the Interstate Compact Commission, was in California last week for a conference with GOVERNOR OLSEN. Mr. Holloway reported that the California executive was impressed with the record of the commission and the work it is doing.

SHIFTS: P. A. COLE, engineer Cities Service Oil Co., from Mooreland, Okla., to Gladewater, Tex.; G. B. BENNETT, engineer Sun Oil Co., from Alta Loma, Tex., to Beaumont, Tex.; J. C. STULL, geologist, from Kincaid, Kans., to St. Joseph, Mo.; CHARLES B. JOHNSON, JR., engineer Barnsdall Oil Co., from Thibodaux, La., to Victoria, Tex.; C. L. CHASE, geologist the Texas Co., from Pampa, Tex., to Midland, Tex.; L. O. GANDY, driller M. G. Drilling Co., from Tyler, Tex., to Evansville, Ind.; D. B. KORCZYNSKI, engineer the Texas Co., from West Columbia, Tex., to Humble, Tex.; DONALD R. RYAN, purchasing agent Stanolind Oil Purchasing Co., from Wichita, Kans., to Mattoon, Ill.; R. H. BOWERS, drilling contractor Ellis & Bowers, from Centralia, Ill., to Owensboro, Ky.; W. H. PATTERSON, geologist Bishop Oil Co., from Mattoon, Ill., to Wichita, Kans.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Raising of Dealer Prices by Standard of Indiana Cheers Group 3 Refiners

By T. F. SMILEY

The pulse of the Group 3 gasoline market quickened perceptibly this week, when Standard Oil Co. of Indiana advanced its dealer prices on regular and premium grades to bring them to normal levels throughout the Chicago division and raised its dealer price for third-grade material 1 cent a gallon. On the same day, throughout Illinois and Indiana, the company advanced to normal all subnormal dealer and tank-wagon prices for regular and premium grades and advanced its prices on third grade to normal, or to the extent of 1 cent where subnormalcy exceeded 1 cent. Tank-wagon prices for kerosene and tractor fuel underwent similar upward adjustment. All changes went into effect Tuesday.

Hope for General Correction

As the territory affected has been a hotbed of price-cutting operations, the company's action encourages the hope that it may mark the beginning of a general correction of retail markets, which are looked upon as the most serious obstruction in the path of struggling tankcar prices. With cheap crude from Illinois at their disposal, refiners in that state have been able to undersell Oklahoma refiners. Much of this cheap gasoline is said to have found outlets at points along the Mississippi River reached by barge.

While this heartening development was taking place in Illinois and Indiana there were evidences of improvement in the retail division in other areas, including Oklahoma. Although cut-price placards still disfigure service stations, pump prices, including those of the price-cutters, have been raised in recent weeks. There was a general feeling among Group 3 refiners this week that the action taken in Illinois and Indiana would be followed in contiguous territory, eventually spreading to all areas that provide outlets for Group 3 refiners. At some points fierce competition brought retail prices 2½ cents below normal. Predictions were made that the favorable turn in the market outlook would result in advances in tankcar prices soon.

Buying for Memorial Day demand imparted a little extra snap to the gasoline market. Rains were general in the past week over much of the region supplied by Oklahoma refiners; but in spite of this drawback, movement of motor fuel was substantial and no serious surpluses of material were reported.

Natural gasoline remained pegged at 2½ cents for the 26-70 grade in both Oklahoma and Texas. There was a fairly brisk demand in the past week for 18-pound material from jobbers who have blending facilities. So long as the large manufacturers are able to absorb the output of 26-70 from small plants with neither storage tanks nor stabilizing facilities it was believed unlikely there would be any recession from the present level of prices.

Buying More Natural

Helping somewhat to support natural gasoline prices are the increased takings of independent refiners in the Gulf Coast region who are not affected by the maritime strike. Obstructed in moving gasoline coastwise from their own Gulf Coast plants, major companies are reported to have supplied some of their needs by purchasing from these independents, who thus have had to buy more natural than usual.

Belief that the lubricants have touched their lows became more firmly established in the past week. There was satisfactory movement of both bright stocks and neutrals, and there seemed to be less readiness to grant concessions.

No change was observable in the light heating oils. Offsetting the seasonal decline in consumption there was an increasing number of inquiries for fall storage. Kerosene was a little firmer, with quotations unchanged. There was no sign of a letdown in wax, which for weeks has been the strongest product in the refinery list.

Refined Oil Market Barometer

Heavy withdrawals from gasoline stocks, the advance in dealer prices by Standard of Indiana in areas where the most disordered retail markets prevailed, and the upward revision of retail quotations in some of the eastern territory are paving the way for better tankcar prices. Decline in consumption of heating oils offset by buying for fall storage.

MID-CONTINENT. Gasoline steady. Naturals holding. Heating oils soft. Wax strong.

EAST COAST. Heavy fuels gaining strength. Gasoline firm. Light fuels under pressure.

GULF COAST. Gasoline stronger. Gas oils steady. Heavy fuels up.

PENNSYLVANIA. Motor fuels firmer. Lubricant market steady.

CALIFORNIA. Market generally inactive, with no price changes.

CHICAGO. Upward revision of dealer gasoline prices improves tankcar market. Heavy fuels firm.

Brighter Outlook for Gasoline Welcomed on Eastern Coast

By H. STANLEY NORMAN

NEW YORK, May 23.—The New York and New England motor-fuel market had a breathing spell last week while increases in the tankcar and tankwagon quotations instituted May 12 were consolidated and extended to the smaller consuming districts.

A stronger Mid-Continent and middle western market combined with the largest dip of motor-fuel stocks of the young summer to brighten the outlook for the next three or four months. The darkest cloud currently in the petroleum-industry picture is the relatively disappointing first-quarter earnings of companies issuing interim reports indicating that the refined-products market is not yet at a satisfactory margin above costs of production.

The belief in general that petroleum markets are moving forward with something less than normal alacrity because of two major issues. One recent deterrent was the bituminous-coal strike. Suppliers hesitated to advance heavy fuel-oil prices when consumers were hard pressed for stocks, fearing that such a move would discourage conversion of burners. Furthermore, the tanker strike and heavy industrial fuel-oil demand spurred importation of Venezuelan fuel oil from the Netherland West Indies. The American price of Bunker C fuel oil is a factor in payment for Venezuelan Government royalty oil and taxes.

Bunker C fuel oil has been one of the petroleum market's strong points in the past 60 days and continued in that position. In most important North Atlantic harbors, the Bunker C fuel price to the marine trade is 95 cents per barrel at refineries and terminals. At shore plants, industrial fuel oil classified as No. 6, and in most respects the counterpart of Bunker C, is held at $1.05 per barrel. Gulf Coast refiners are asking from 75 to 77½ cents per barrel, but several are unable to quote in the spot market because of limited supplies and demand of contract customers which approximately equals current and projected production. Belief is general among market observers that heavy fuel oils will be advanced in the near future unless a severe reaction develops from resumption of bituminous-coal output.

With arrival of more moderate temperature averages, the light fuel-oil market has been subjected to additional pressure. Demand has held up above expectations, accounting for relatively late softening of the market, although downward adjustments of an eighth to a half cent per gallon have been made over the course of the past 5 or 6 weeks. The most recent indication of softer markets for light oils was the reduction of a quarter cent per gallon on the terminal and tankcar price of burning oils in the kerosene range on May 15 by Standard Oil Co. of New Jersey at Philadelphia. The reduction lowered the tankcar and terminal price of Essoheat light and No. 1 range oil to 4½ cents per gallon at Philadelphia. The spot market for kerosene at Philadelphia terminals has been at the range of 4½ to 4¾ cents per gallon for several weeks, and the inside price was generally considered at 4⅜ cents.

Motor-fuel prices were generally unchanged in the northeastern section of the country last week. This relative stability of the northeastern gasoline market in the face of advances in the Mid-Continent, East Texas, and the Middle West is due to two reasons. In the first place, the North Atlantic motor-fuel market has shown greater resistance to depressant factors in the earlier months of slack consumption. In the second place, New York and New England tankcar prices were advanced from a tenth to a quarter of a cent in the second week of May, covering the points of most intense consumption. The western Pennsylvania motor-fuel market was advanced an eighth to a quarter of a cent during the last week of April and the first part of May. The eastern Pennsylvania and southern New Jersey market is showing signs of improvement. Service-station operators are seeking means of ending price wars and satisfactory results were reported from Philadelphia, where retail quotations were raised last week as much as 3 cents per gallon.

The tankcar price for 65-octane gasoline at New York ranges from 6 to 6¼ cents per gallon. The Baltimore market responded to improved demand last week, and most suppliers there are currently quoting from 6 to 6¼ cents to the tankcar trade. The coastwise and export cargo market for minimum 65-octane motor fuel on the Gulf is between the range of 4¾ and 4⅞ cents per gallon. Gasoline of 62-octane is available on the Gulf at 4½ cents, but the better grades of motor fuel are held at a minimum of 5 to 5⅛ cents for 70-octane, depending on whether specifications call for leaded or unleaded material.

Reports in New York indicated that the light fuel-oil market on the Gulf Coast has softened somewhat during the past week. Indications are that No. 2 fuel oil of low Diesel index may be available for 2⅞ to 3 cents per gallon. Stocks of light fuel oil have been accumulating more rapidly than normal because of the tanker strike. Struck tanker operators are concentrating their efforts on maintaining supplies of seasonal products. The East Coast demand for several refinery products is running from 15 to 18 per cent higher than in 1938. The increased demand is concentrated largely on industrial fuel oil and gasoline.

Wax prices continue their upward trend. Current consumption is holding abreast of production, and several suppliers are unable to quote on the spot market because of contracts and depleted stocks. Some suppliers elevated their quotations on 124-126 A.m.p. white crude scale to 3 cents per pound at New York last week after sales were consummated at 2.9 cents. Most of the wax-market strength is due to the high export requirements so far this year. During the first quarter, wax exports exceeded 63,000,000 lb., compared with 37,000,000 lb. for the same period in 1938.

The lubricating oil market was generally unchanged last week, although one western Pennsylvania refiner was said to have elevated bright-stock quotations a quarter to a cent per gallon. Neutral oils and dark cylinder stocks were unchanged. Bright stock of 145-155 viscosity was still obtainable at 18½ cents for material meeting 10 pour point, although some suppliers are asking an additional half cent on the high of the market range at 19½ cents.

A. P. I. Weekly Refinery Statistics

Week Ending May 20, 1939

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	520,000	21,533,000	5,512,000
Appalachian	85.9	107,000	3,594,000	677,000
Indiana, Illinois, and Kentucky	89.5	492,000	14,312,000	4,782,000
Oklahoma, Kansas and Missouri	81.6	284,000	7,388,000	3,888,000
Inland Texas	50.3	126,000	1,642,000	1,904,000
Texas Gulf	89.5	866,000	10,754,000	8,144,000
Louisiana Gulf	97.3	138,000	2,533,000	2,273,000
North Louisiana and Arkansas	55.0	43,000	534,000	810,000
Rocky Mountains	54.2	41,000	1,705,000	685,000
California	90.0	510,000	15,249,000	96,725,000
Total reported	85.8	3,127,000	79,244,000	125,400,000
Estimated unreported	.....	333,000	5,050,000	2,850,000
*Estimated total	.....	3,460,000	84,294,000	128,250,000
*Estimated total previous week	.....	3,400,000	84,808,000	127,537,000
May 21, 1938	.....	3,201,000	88,825,000	131,455,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending May 13, 1939	277,739,000 barrels
Week ending May 6, 1939	278,607,000 barrels
Week ending May 14, 1938	304,198,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Gulf Oil Purchases Outlets From Pure Oil Co.

Gulf Oil Corp. was reported in press dispatches from Pittsburgh last week to have confirmed the purchase of 35 retail and bulk gasoline plants from Pure Oil Co. and the acquisition of approximately 100 leased outlets.

The deal involves 10 bulk plants and 25 retail stations in the Mohawk Valley of New York and in New Jersey. The leased stations are in New York, New Jersey, Connecticut and Massachusetts.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of May 23, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank-wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	15.1	13.6	4.0	10.0
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	13.6	4.0	10.0
Quincy	14.9	13.4	4.0	9.7
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	9.4
Minneapolis	16.5	15.0	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.0	5.0	10.3
Milwaukee	14.9	13.4	5.0	10.2
Detroit, Mich.	13.1	11.6	4.0	7.1
Grand Rapids	14.0	12.5	4.0	9.7
Saginaw	15.8	13.1	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†10.7
South Bend	17.1	15.6	5.0	†10.0
Fargo, N. D.	16.7	15.2	4.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.4	4.0	8.0
St. Louis*	14.2	12.7	4.0	8.0
St. Joseph	14.4	12.0	4.0	8.16
Wichita, Kans.	13.9	11.1	4.0	7.4

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective February 15, 1939, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8 cents; 150 gallons and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8.25 cents; 150-399 gallons, 7.25 cents; 400 gallons and over, 6.75 cents. Stanolex furnace oil, 1-149 gallons, 8.25 cents; 150-399 gallons, 7.25 cents; 400 gallons and over, 6.75 cents. Stanolex Grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex Grade B, 1-799 gallons, 4.75 cents; 800 gallons and over, 3.75 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Gasoline Dlvided dlr.	Gasoline Inc. tax	Kero. tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Cons. tank-car	Gasoline Dlr. tank-wag.	Gasoline Inc. tax	Kero. tank-wag.
Atl'tic City, N. J.	10.9	12.7	4.0	7.0
Newark	10.9	12.7	4.0	7.0
Annapolis, Md.	12.85	14.35	5.0	9.5
Baltimore	12.25	13.75	5.0	7.0
Cumberland	13.65	16.15	5.0	10.0
Wash'gton, D. C.	10.50	12.0	3.0	9.5
Danville, Va.	14.45	16.95	6.0	12.9
Norfolk	13.25	15.75	6.0	11.5
Petersburg	13.55	16.05	6.0	11.7
Richmond	13.55	16.05	6.0	10.7
Roanoke	14.75	17.25	6.0	11.0
Charles'n, W. Va.	14.05	16.55	6.0	12.6
Parkersburg	13.35	14.85	6.0	11.2
Wheeling	14.35	15.75	6.0	12.2
Charlotte, N. C.	15.65	18.15	7.0	12.1
Hickory	16.15	18.65	7.0	12.5
Mt. Airy	15.95	18.45	7.0	12.3
Raleigh	15.25	17.75	7.0	11.6
Salisbury	15.75	18.25	7.0	12.2
Charleston, S. C.	14.25	16.75	7.0	10.6
Columbia	15.25	17.75	7.0	11.6
Spartanburg	15.95	18.45	7.0	12.4

Price basis to Essolene undivided dealers: Dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gallons or more, consumer tank-wagon price. Single deliveries of less than 50 gallons, 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less .5 cent per gallon. The above policy also applies in South Carolina effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Cons'r. tank-wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank-wag.
Atlanta, Ga.	20.5	17.5	7.0	9.0
Augusta	19.5	16.5	7.0	9.0
Macon	20.0	17.0	7.0	10.0
Savannah	18.5	15.5	7.0	8.0
Birmingham, Ala.	21.0	18.0	8.0	8.5
Mobile	21.0	18.0	9.0	8.5
Montgomery	21.0	19.0	9.0	10.5
Jackson, Miss.	17.5	14.5	7.0	9.5
Vicksburg	19.0	16.0	7.0	9.0
Jacksonville, Fla.	19.5	16.5	8.0	8.0
Miami	19.5	16.5	8.0	8.0
Pensacola	20.5	17.5	9.0	8.0
Tampa	19.5	16.5	8.0	8.0
Lexington, Ky.	19.0	16.0	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	17.5	14.5	6.0	9.0
Paducah	18.0	15.0	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle ,Wash.	20.0	21.0	6.0	†13.75
Spokane	22.0	23.0	6.0	†16.75
Tacoma	20.0	21.0	6.0	†13.75

*Includes 5-cent state tax. †Includes .25-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

March 18, 1939, split dealer discount was canceled.

Pennsylvania, Delaware, and Part of New England

ATLANTIC REFINING CO.

	Gasoline Cons. tank-car	Gasoline Dlr. tank-wag.	Gasoline Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	12.0	13.5	5.0	10.0
Pittsburgh	13.0	13.5	5.0	10.5
Allentown	12.5	14.0	5.0	10.5
Erie	13.0	14.0	5.0	10.0
Scranton	12.5	14.0	5.0	10.5
Altoona	13.0	13.5	5.0	10.5
Dover, Del.	...	14.0	5.0	10.5
Wilmington	...	13.5	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Cons. tank-car	Gasoline Dlr. tank-wag.	Gasoline Inc. tax	Kero. tank-wag.
Albany	11.6	13.7	5.0	7.25
*Met. N. Y.:				
Manhat., Bronx	11.7	12.8	5.0	7.0
Queens, Br'klyn	11.7	12.8	5.0	7.0
Staten Island	11.7	13.0	5.0	7.0
Buffalo	12.4	11.8	5.0	7.0
Rochester	12.6	12.75	5.0	8.0
Syracuse	12.2	14.2	5.0	7.5
Boston, Mass.	10.6	12.0	4.0	6.75
Portland, Me.	10.6	12.8	5.0	7.0
Manchester, N.H.	12.1	14.1	5.0	7.5
Burlington, Vt.	12.1	13.5	5.0	7.5
Springfield, Mass.	11.3	12.8	4.0	7.25
Worcester	11.1	12.8	4.0	7.25
Hartford, Conn.	11.0	13.1	4.0	6.50
New Haven	10.9	12.25	4.0	6.00
Providence, R. I.	10.6	12.3	4.0	6.75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and New England points for tank-wagon delivery to the following: Annual purchases 10,000 gallons and under, tankcar price plus 2 cents per gallon; annual purchases 10,000 gallons up to 50,000 gallons, tankcar price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gallons, tankcar price plus 1 cent per gallon; annual purchases 200,000 gallons and over, tankcar price plus one-half cent per gallon. Private consumers will pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gallons will receive a discount of one-half cent per gallon.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank-wag.	Gasoline Dlr.	Gasoline Incl. tax	Kero. tank-wag.
Denver, Colo.	17.5	15.5	5.0	11.5
Grand Junction	20.0	18.0	5.0	15.0
Pueblo	16.0	14.0	5.0	9.0
Casper, Wyo.	19.0	17.0	5.0	11.5
Cheyenne	17.0	15.0	5.0	13.0
Billings, Mont.	18.0	18.0	6.0	13.0
Butte	19.5	19.5	6.0	15.5
Great Falls	19.0	19.0	6.0	15.5
Helena	20.0	20.0	6.0	15.5
Salt Lake, Utah	17.0	17.0	5.0	16.0
Boise, Idaho	20.1	20.1	6.0	18.0
Twin Falls	20.6	20.6	6.0	18.0
Albu'que, N. M.	16.5	16.5	6.5	10.0

*Includes city tax of .5 cent. †Includes state tax of 1 mill.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Cons. tank-car	Gasoline Dlr. tank-wag.	Gasoline Inc. tax	Kero. tank-wag.
New Orleans, La.	16.75	19.25	*10.0	†11.0
Baton Rouge	14.75	17.25	8.0	‡10.5
Alexandria	14.75	17.25	8.0	‡12.5
Lafayette	15.00	17.50	8.0	‡10.0
Lake Charles	14.75	17.25	8.0	‡12.5
Shreveport	13.50	16.00	8.0	‡11.0
Knoxville, Tenn.	18.00	20.50	8.0	14.5
Memphis	16.00	18.50	8.0	12.5
Chattanooga	17.50	19.00	8.0	14.0
Nashville	17.00	19.5	8.0	12.0
Bristol	18.25	16.50	8.0	13.0

Essolene at dealer price less .5 cent per gallon to undivided dealers.

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gallons, consumer tankcar plus 2 cents per gallon; 50 to 199 gallons, consumer tankcar plus 1 cent per gallon; 200 gallons and over, consumer tankcar plus .5 cent per gallon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank-Wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	17.5	16.0	6.0	10.3
McCook	17.0	14.0	6.0	9.0
Norfolk	16.0	14.9	6.0	9.0
North Platte	18.3	15.9	6.0	11.1
Scottsbluff	17.0	14.9	6.0	11.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Tank-wag.	Gasoline Dlr.	Gasoline Incl. tax	Kero. tank-wag.
Texarkana, Ark.	13.0	13.0	5.0	8.0
Fort Smith	14.0	14.0	5.0	7.5
Little Rock	16.75	16.75	7.5	8.0
Muskogee, Okla.	12.0	12.0	5.0	7.0
Oklahoma City	11.0	11.0	5.0	6.5
Tulsa	12.0	12.0	5.0	6.5

Texas

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Dallas, Tex.	13.0	17.0	5.0	7.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	13.0	17.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	23.5	10.0	17.5
St. John, N. B.	23.5	10.0	17.5
Montreal, Que.	22.0	8.0	14.5
Toronto, Ont.	23.0	8.0	15.5
Hamilton, Ont.	23.0	8.0	15.5
Winnipeg, Man.	26.5	7.0	20.5
Brandon, Man.	28.0	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Indiana) May 23 advanced dealer gasoline 1 cent in Chicago, Decatur, Joliet, and Quincy, and .5 cent in Peoria. On same date advanced tank-wagon kerosene 1 cent in South Bend and .7 cent in Indianapolis.

Socony-Vacuum Oil Co., Inc., May 5 reduced consumer tankcar gasoline 1 cent and dealer tank-wagon gasoline .7 cent in Portland. May 12, advanced tank-wagon gasoline .3 cent in Hartford.

L. W. Bennett, treasurer of the Sunray Oil Co., returned to Tulsa last Friday from California, where he looked after work in connection with the company's properties in the Wilmington field. He was accompanied by Mrs. Bennett. They visited their son Dwight, a student at California Technical Institute, Pasadena, and saw the San Francisco World Fair.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of May 23, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅜	.04¾
70-72 octane (regular)	.04⅞	.05
60-62 400 grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅜	.04¾
70-72 octane (regular)	.04⅞	.05
64-66 375	.04⅛	.04¼
68-70 360	.05	.05¼

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅜	.04¾
70-72 octane (regular)	.04⅞	.05
60-62 400	.04⅛	.04¼
64-66 375	.04⅛	.04¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04⅜	.04½
63-66 octane	.04⅜	.04¾
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05⅝

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below	.04¼	.04⅜
67-69 octane	.04¾	.04⅞

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅜	.04¾
70-72 octane (regular)	.04⅞	.05
60-62 400 grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04⅜	.04½
67-69 octane	.04⅜	.04¾
70-72 octane (regular)	.04⅞	.05
64-66 375	.04⅛	.04¼
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.04½
65 octane		.06¼
68-70 octane		.06½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 65 and above:		
*New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Baltimore	.06	.06¼
Charleston, S. C.	.06½	.06¾

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.04¼	.04⅜
60-64.9	.04⅝	.04¾
65 octane and higher		.04⅞
68-70	.04⅞	.05⅛

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¼	.04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02½
Grade 18-55	.03	.03⅛

NORTH TEXAS—

Grade 26-70		.02½
Grade 18-55	.02⅞	.03

CALIFORNIA—

75-85 375-390	.06¼	.06⅜

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.02⅞

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03¾	.04
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅞	.04⅛
46-48 gr., 210-230 i.b.p., 480-max., e.p.	.04¼	.04½

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03¾	.03⅞
42-44	.04	.04⅛

NORTH TEXAS—

41-43	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04¼

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (inland refineries)—

45	.05	.05⅛
46	.05¼	.05¼
47	.05¼	.05⅜

CHICAGO (Based on Group 3)—

41-43	.03⅞	.04⅛
42-44	.04⅛	.04¾

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04¾	.05¾

NEW YORK (Bayonne, N. J.)—

41-43		.04⅝

***GULF COAST (domestic)—**

41-43		.03½

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½	.03⅝
No. 1 prime white, 38-42	.03¼	.03½
No. 1 straw, 38-40	.03⅛	.03⅜
No. 2 straw, 32-36	.02¾	.03
No. 2 dark, 32-36	.02⅝	.02¾
No. 3 zero to 15, 28-32	.02½	.02⅝
No. 3, 15 and above, 28-32	.02⅜	.02½

NORTH TEXAS—

No. 1 prime white, 38-42	.03¼	.03½
No. 1 straw, 38-40	.03⅛	.03⅜

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03⅜	.03⅝

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅜

CHICAGO (Based on Group 3)—

Range oil	.03⅜	.03⅞
No. 1 prime white, 38-40	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03⅛	.03¼
No. 3, zero to 15, 28-32	.03	.03⅛
No. 3, 15 and above, 28-32	.02⅜	.02⅝

NEW YORK (Bayonne, N. J.)—

*No. 1	.04¼	.04⅜
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅝	.02¾
No. 4 low pourpoint, 24-28	.90	1.00
No. 4, 15 and above, 24-28	.80	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.45	.55

NORTH TEXAS—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low pourpoint, 24-28	.90	1.00
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.45	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low pourpoint, 24-28	1.00	1.05
No. 4, 15 and above, 24-28	.85	.90
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.04½	.04¾

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.35
24 plus Diesel, per bbl.	1.00	1.30
24 plus Diesel (bunkers)	1.15	1.50
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.60	.80
12-17 (tankcars)	.50	.80
10-17 (high sulfur)	.45	.70
San Joaquin Valley:		
10-18 (tankcars)	.50	.80
24 plus Diesel, per bbl.	1.15	1.40
San Francisco:		
24 plus Diesel, per bbl.	1.40	1.45
24 plus Diesel (bunkers)	1.45	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03
43-47 Diesel	.03¼	.03½
48-52 Diesel	.03⅝	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunker C (bulk cargoes)		.75
Bunker C (bunkers)	.75	.85

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04
28-30 Diesel (lighterage 6¼c per bbl.)		1.65
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)		.03¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.17½	.18½
15 pourpoint	.16½	.17½
25 pourpoint	.15	.15½
Steam refined:		
600	.08½	.10
650	.10½	.11
600 flash	.11	.12
630 flash	.13½	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
160-2½ paraffin oil		.06
15-20 pourpoint:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07½
300-3	.07½	.07⅝
500-3½	.08½	.08⅝
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09⅝
1,500-4	.09¾	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08⅝	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¾	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pourpoint	.18½	.19
10 pourpoint	.18	.18½
15 pourpoint	.16½	.17
25 pourpoint	.15	.15½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.19½	.20
10 pourpoint	.19	.19½
15 pourpoint	.18½	.19
25 pourpoint	.17	.17½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.0285	.03

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0270	.0280
124-126 (a.m.p.) w.c. scale	.0275	.0280

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0350
125-127 (a.m.p.) wax		.0360
128-130 (a.m.p.) wax		.0375
130-132 (a.m.p.) wax		.0435
133-135 (a.m.p.) wax		.0465
135-137 (a.m.p.) wax		.0490
124-126 (a.m.p.) w.s.	.0255	.0260
124-126 (a.m.p.) y.s.	.0250	.0255
Petrolatum in barrels, carload lots:		
Dark green	.02	.02½
Amber	.02⅝	.02¾
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¾
Snow white	.06⅛	.06¼
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¼	.04⅜
60-62 400	.04¼	.04⅜
61-63 390	.04⅜	.04⅝
64-66 375		.04

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.04½	.04⅝
65-69 octane	.04⅝	.05
Above 69 octane	.05	.05½

KEROSENE

GULF COAST—

41-43 prime white		.03½
41-43 water white		.03½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0255	.0260
124-126 y.s.	.0255	.0260

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Van, Tex. (Oct. 11, 1938)* ..... .93
Talco, Tex. (Oct. 11, 1938)* ..... .55
Rodessa, Tex. ..... See North Louisiana gravity schedule
Cass and Panola counties, Texas ..... See gravity schedule
Altus and Tipton† ..... See note below
Cayuga, Tex. (Feb. 15, 1939) ..... .68
Clay Creek, Tex. ..... .85

*Humble Oil & Refining Co. †Gulf Refining Co. Pure Oil Co.'s Van price, 93 cents, effective Oct. 13, 1938.

Altus and Tipton, Okla., starting at below 25 degrees at 71 cents, 2-cent spread to 40 degrees and above at $1.03. East Texas price met by all buyers posting prices. Talco price adopted by Talco Pipe Line on October 11. Cayuga posted by Pan American Pipe Line Co. Clay Creek posted by Sun Oil Co.

Southwest Texas

Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoborosk! (Oct. 11, 1938)* ..... $ .96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Springs (Oct. 12, 1938)† ..... .99
Mirando (Oct. 12, 1938)† ....
Government Wells (Oct. 13, 1938) ..... See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20 gravity, 77 cents, 3-cent spread to 24-24.9 at 89 cents.

Gulf Coast

Conroe, Tex. (Oct. 11, 1938)* $1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)† ..... See note below
Gibson, La. (Oct. 11, 1938)† 1.04
Garden Island, La. (Oct. 12, 1938‡ 1.24
Lafitte, La. (Oct. 12, 1938)‡ 1.04
Cleveland, Tex. (Oct. 12, 1938)¶ ... 1.14
Schwab, Polk County (Feb. 20, 1939) 1.00
Hardin, Tex. (Oct. 12, 1938)¶ 1.02
Tepetate, La. (Oct. 11, 1938)¶ 1.03
Villa Platte, La. (Oct. 11, 1938)¶ ... 1.03
Abbeville, La. (Jan. 1, 1939)¶ ..... See note below
Bosco, La. (Dec. 3, 1938)¶ ..... .93
Creole, La. (Oct. 13, 1938)¶ ..... .96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)¶ ... See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)** ..... See note below
Long Lake, Tex. (Oct. 13, 1938** 1.08
Segno and Wing (Oct. 13, 1938)** ..... See note below
Livingston (Oct. 11, 1938)† 1.10
Gibson, La. (Oct. 11, 1938)† 1.04

*Humble Oil & Refining Co. †Shell Oil Co., Inc. ‡Texas Co. §Continental Oil Co. ¶Magnolia Petroleum Co. ‖Pure Oil Co. **Gulf Refining Co.

Black Bayou, etc., starts at below 20 degrees at 79 cents; 20-20.9, 81 cents; 21-21.9, 83 cents, then a 3-cent spread to 26-26.9 degrees, 98 cents. Then a 2-cent spread to 40 degrees and over at $1.14. Abbeville starts at below 36 degrees, 92 cents, 2-cent spread to 40 degrees and over at $1.02. Gueydan, etc., starts below 20 degrees, 79 cents, 3-cent spread to 26-26.9 degrees at $1, and 2-cent spread to 40 degrees and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18 gravity, 76 cents, 2-cent spread to 20-20.9 at 82 cents; then a 3-cent spread to 26-26.9 at $1; then a 2-cent spread to 34 degrees and over at $1.16. Schwab posted by Shell Oil Co., Inc.

North Louisiana and Arkansas

Shreveport, La. (Apr. 18, 1939) ... $1.05
Smackover, Ark. (Oct. 5, 1938)* ... .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)* ..... See note below
Schuler, Jones sand ..... See note below
Tullos and Urania ..... .89
Cotton Valley, La. (distillate) (Dec. 23, 1938)* 1.20
Lisbon, La. (April 29, 1939) ..... See note below

*Smackover posted by Standard Oil Co. of Louisiana, October 5, 1938; by Magnolia Petroleum Co., October 12; by Gulf Refining Co., October 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

Schuler Jones sand schedule starts at below 25 degrees, 66 cents, with 2-cent spread to 40 and over at 98 cents; by Lion Oil Refining Co. on October 5, 1938; Schuler light Morgan sand crude takes North Louisiana gravity scale along with El Dorado and Champagnolle; by Lion Oil Refining Co., October 5; Buckner, Magnolia, and Village schedules posted by Standard Oil Co. of Louisiana and Lion Oil Refining Co. on October 5; quote same prices as for Schuler Jones sand crude. Shreveport by Caddo Crude Oil Purchasing Co. and Atlas Oil Corp. Lisbon: Caddo Crude Oil Purchasing Co. posts below 34 gravity, 73 cents; 34-34.9, 75 cents; 35 and above, 77 cents. Effective May 1, 1939, Gulf Refining Co. posted a flat price of 77 cents in Lisbon.

Middle Western States

OHIO OIL CO.
(Effective October 13, 1938)

Illinois old fields 1.05
Illinois basin 1.15
Princeton, Ind. 1.05
Western Kentucky (Oct. 13, 1938)† 1.10
Birk City, Ky. (Apr. 12, 1939)¶ 1.00
Greendale, Poster, Crystal and Wise, Mich. (Apr. 20, 1939)*† 97½
Buckeye, Bentley, Edenville, Beaverton, Mich. (Apr. 20, 1939)* ..... .95
Freeman-Redding, Mich. (Apr. 20, 1939)* ..... .89
West Branch and Arenac, Mich. (Apr. 20, 1939)* ..... .74
Allegan-Kent (Apr. 16, 1939)‖ ..... .88
Bloomingdale (Apr. 10, 1939) ..... .88
Muskegon 1.00
Sherman, Mich. (Apr. 20, 1939)‡ ... .89
Eastern Kentucky:
Big Sandy River† 1.12
Kentucky River† 1.20

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co. pays above posted prices in Porter, Greendale and Sherman, effective April 20. §Imperial Refining Co. ¶Sohio Oil Co. Bloomingdale posted by Tri-Lakes Corp.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)* .$ .92
Elk Basin, Wyo. (Oct. 11, 1938)*† . .90
Grass Creek, light, Wyo. (Oct. 11, 1938)*† ..... .90
Grass Creek, heavy (Oct. 11, 1938)† .40
Lance Creek, Wyo. Oct. 11, 1938)* .77
Rock Creek, Wyo. (Oct. 11, 1938)*. 1.00
Iles, light, Colo. (Oct. 11, 1938)† ... .98
Iles, heavy, Colo. (Oct. 11, 1938)† .92
Dutton Creek, Wyo. (Oct. 11, 1938)† ..... See note below
Frannie, light, Wyo. (Oct. 11, 1938)† .55
Frannie, heavy, Wyo. (Oct. 11, 1938)† ..... .42
Hamilton dome, Wyo. Oct. 11, 1938)† ..... .35
Midway, Wyo. (Oct. 11, 1938)† ..... See note below
Salt Creek Tensleep crude, Wyo. (Oct. 11, 1938)† ..... .646
Salt Creek (Oct. 11, 1938) See note below
Canon City, Colo. (Oct. 11, 1938)‡. .90
Florence, Colo. (Oct. 11, 1938)‡.. .90
Cat Creek, Mont. (Oct. 11, 1938)‡.. 1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡.. .98
Lance Creek, Wyo. (Oct. 11, 1938)‡ .77
Lea County, N. M. ..... See West Texas gravity schedule‡
Artesia, Jackson and Maljamar ..... See gravity table‡
Fort Collins and Wellington, Colo. ..... See gravity table‡
Eddy County, N. M. (October 11, 1938)¶ ..... .77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. §Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crude start at below 29 degrees, 86 cents, 2 cents spread to 40 and over at $1.10. Salt Creek crude excepting Tensleep takes Standard Oil Co. of Indiana, Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective October 11, discontinued posting prices in Greybull-Torchlight, Wyo., and Hogback and Hospah, N. M.

Eastern States

SOUTH PENN OIL CO.
(Effective March 6, 1939)

Pennsylvania Grade Oil in National Transit Lines (Bradford field) .$2.00
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.65
Pennsylvania Grade Oil in Eureka Pipe Line lines 1.59
Pennsylvania Grade Oil in Buckeye Pipe Line lines 1.55
Corning Grade Oil in Buckeye Pipe Line Co. line (Jan. 24) 1.02

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective March 6, 1939)

Bradford, Pa. $2.00
Allegany, N. Y. 2.00

PENNZOIL CO.
(Effective March 6, 1939)

Group A $1.95
Group B 1.94
Group C 1.93
Group D 1.93
Group E 1.90

PURE OIL CO.
(Effective March 6, 1939)

West Virginia $1.59

West Texas

See gravity table.
Fisher County, Tex., April 1, 1939. See note below.
Pecos County (Oct. 11, 1938)* ....$ .78
Pecos shallow (Oct. 11, 1938)† .... .65

*Shell Oil Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Oil Co. Fisher County, Tex. By Shell Oil Co. Inc., below 25 degrees 68 cents; 25 degrees, 70 cents, with 2-cent spread to 40 degrees and over at $1.

Canada

Ontario (Oct. 25, 1938)*

Petrolia $1.90
Oil Springs 1.97

*Imperial Oil, Ltd.

TURNER VALLEY
(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher ... $2.14
Discolored naphtha and crude oil, 40-40.9 gravity 1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity 1.62

These prices f.o.b. producers' field tankage.

Rocky Mountain Runs

Production estimates for week ended May 20:

	Barrels
WYOMING	
Salt Creek	15,060
Big Muddy	1,210
Dallas Derby	530
Elk basin	580
Frannie	1,280
Garland	1,860
Grass Creek	3,950
Hamilton Dome	1,600
LaBarge	920
Lance Creek	14,740
Lost Soldier	1,880
Mahoney	350
Medicine Bow	2,060
Oregon basin	2,270
Osage	800
Quealy Dome	630
Rock River	3,050
Wertz	1,520
Miscellaneous	1,070
Total Wyoming	55,360
MONTANA	
Border	60
Cat Creek	560
Cut Bank	8,580
Dry Creek	750
Kevin-Sunburst	3,710
Pondera	580
Total Montana	14,240
COLORADO	
Florence	120
Fort Collins and Wellington	340
Wilson Creek	240
Iles Dome	2,030
Moffat	300
Orchard	30
Rangely	70
Tow Creek	150
Price	290
Total Colorado	3,570
NEW MEXICO	
Cooper	4,510
Eaves	900
West Eunice	110
Eunice	24,640
Hardy	3,639
Hobbs	13,080
Jal	740
Langlie	5,700
Lynch	550
Lynn	870
Mattix	4,480
Monument	25,500
North Lynch	40
Penrose	5,770
Rhoades	140
Skaggs	90
Skelly	1,910
South Eunice	3,970
South Lovington	220
Vacuum	10,150
Artesia-Maljamar	8,990
Getty	100
Hogback	200
Rattlesnake	510
Table Mesa	80
Total New Mexico	116,880
Total Rocky Mountain region	190,050

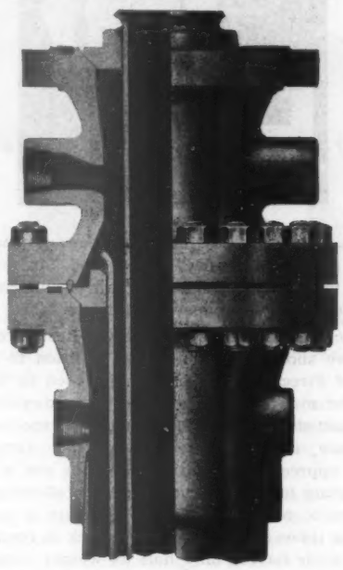
Crude Prices by Gravities

	1 Oklahoma	2 Oklahoma and Kansas	3 North and Central Texas	4 Louisiana and Arkansas	5 East Central Texas	6 Gray County, Texas	7 Hutchinson and Carson counties, Texas	8 Raccoon Bend, Satsuma and Tomball, Texas	9 West Texas and Lea County, N. M.	10 Fort Collins and Wellington, Colo.	11 Anahuac and Dickinson, Mirando, Duval, Texas.	12 Refugio, Texas	13 Gulf Coast Texas	14 Cass and Panola counties, Texas	15 Beaumont and West Beaumont, Texas	16 Lockport, Iowa, Cameron Louisiana	17 Artesia, Jackson and Maljamar, N. M.	18 Iowa, Louisiana
Below 18	....	....	....	....	....	....	....	....	$.53	....	$.74	$.79	$.79	....	....	$.74	....	$.75
18-18.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.79	....	....	.76	....	.77
19-19.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.79	....	$.79	.78	....	.79
20-20.9	$.60	$.70	....	....	....	....	....	....	.55	....	.77	.82	.82	....	.82	.80	....	.81
21-21.9	.63	.72	....	....	....	....	....	....	.57	....	.80	.85	.85	....	.85	.82	....	.83
22-22.9	.66	.74	....	....	....	....	....	.95	.59	....	.83	.88	.88	....	.88	.85	....	.86
23-23.9	.69	.76	....	....	$.78	....	....	.97	.61	....	.86	.91	.91	....	.91	.88	....	.89
24-24.9	.72	.78	$.71	....	.80	....	....	.99	.63	....	.89	.94	.94	....	.94	.91	....	.92
Below 25	....	....	....	$.73	....	....	....	....	....	....	....	....	....	$.73	....	....	....	....
25-25.9	.75	.80	.73	.75	.82	....	....	1.01	.65	....	.92	.97	.97	.75	.97	.94	....	.95
26-26.9	.78	.82	.75	.77	.84	....	....	1.03	.67	....	.95	1.00	1.00	.77	1.00	.97	....	.98
27-27.9	.81	.84	.77	.79	.86	....	....	1.05	.69	....	.97	1.02	1.02	.79	1.02	.99	....	1.00
28-28.9	.84	.86	.79	.81	.88	$.72	$.67	1.07	.71	$.81	.99	1.04	1.04	.81	1.04	1.01	$.61	1.02
29-29.9	.87	.88	.81	.83	.90	.74	.69	1.09	.73	.83	1.01	1.06	1.06	.83	1.06	1.03	.63	1.04
Below 30	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30-30.9	.90	.90	.83	.85	.92	.76	.71	1.11	.75	.85	1.03	1.08	1.08	.85	1.08	1.05	.65	1.06
31-31.9	.92	.92	.85	.87	.94	.78	.73	1.13	.77	.87	1.05	1.10	1.10	.87	1.10	1.07	.67	1.08
32-32.9	.94	.94	.87	.89	.96	.80	.75	1.15	.79	.89	1.07	1.12	1.12	.89	1.12	1.09	.69	1.10
33-33.9	.96	.96	.89	.91	.98	.82	.77	1.17	.81	.91	1.09	1.14	1.14	.91	1.14	1.11	.71	1.12
34-34.9	.98	.98	.91	.93	1.00	.84	.79	1.19	.83	.93	1.11	1.16	1.16	.93	1.16	1.13	.73	1.14
Below 35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.00	1.00	.93	.95	1.02	.86	.81	1.21	.85	.95	1.13	1.18	1.18	.95	1.18	....	.75	....
36-36.9	1.02	1.02	.95	.97	1.04	.88	.83	1.23	.87	.97	1.15	1.20	1.20	.97	1.20	....	.77	....
37-37.9	1.04	1.04	.97	.99	1.06	.90	.85	1.25	.89	.99	1.17	1.22	1.22	.99	1.22	....	.79	....
38-38.9	1.06	1.06	.99	1.01	1.08	.92	.87	1.27	.91	1.01	1.19	1.24	1.24	1.01	1.24	....	.81	....
39-39.9	1.08	1.08	1.01	1.03	1.10	.94	.89	1.29	.93	1.03	1.21	1.26	1.26	1.03	1.26	....	.83	....
40 and over	1.10	1.10	1.03	1.05	1.12	.96	.91	1.31	.95	1.05	1.23	1.28	1.28	1.05	1.28	....	.85	....

New or Improved Equipment

Rector's Slip-Type Casinghead Embodies Distinctive Feature

Rector Well Equipment Co., Inc., Fort Worth, Tex., has announced a slip-type casinghead, Type

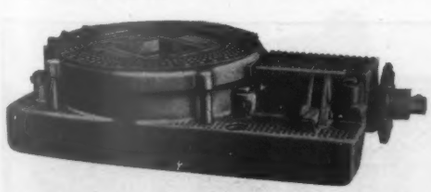


RH, which incorporates an exclusive Rector patented sealing and hold-down device. This feature, in conjunction with a steel hanger, welded or otherwise attached to the casing, provides a positive, rigid and hermetic seal of pressures from annular space and prohibits any upward thrust of casing due to extreme pressures or expansion of metals.

The Type RH, shown in the illustration, has a full opening through the body, with no beveled seats or other protuberances within the body to be jammed or damaged by contact with tool joints or bits while drilling. Blowout-preventers can be attached directly to the flange of the casinghead, no spool being necessary. Any equipment of the operator's choice that is equipped with A.P.I. flanges of like series can be attached directly to these casingheads without the use of adapter-spools or flanges.

National Supply's Latest Rotary Built for 5,000-Foot Drilling

The latest addition to National Supply Co.'s line of rotary machines is the Ideal F-17½. Designed for 5,000-ft. drilling, this new rotary is a fully en-



closed oilbath unit incorporating many proven National features of design. It has a heavy-duty ball-type main bearing composed of twenty-seven 2½-in. diameter balls which operate in oil at all times. The gears are cut on precision machines from alloy steel and have a ratio of 3.33 to 1. Straight or spiral bevel gears are available as specified. The table has a full 17½-in. opening to accommodate both bits and casing.

The pinion-shaft has a maximum diameter of 4¾ in. and is supported on two roller bearings mounted in independent housings that are bolted to the under side of the base. The bearing nearer the pinion is of the straight roller type and the sprocket end bearing is of the spherical roller type. A convenient lock pawl is located on each side of the shaft for engaging the pinion-shaft lock ring, which is fully protected in the base.

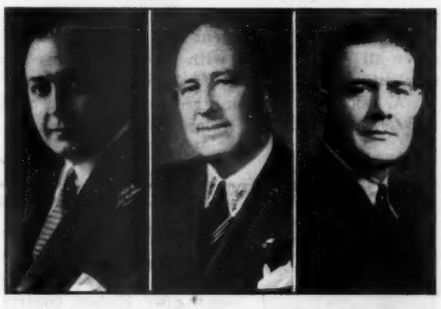
Inner Tube Seals Punctures

A passenger-car inner tube, capable of actually sealing punctures on moving wheels without loss of tire pressure, is announced by the B. F. Goodrich Co., Akron, Ohio. The new tube development reduces blow-out danger to a minimum, according to Goodrich engineers, at the same time giving protection against flat tires caused by nails, screws and glass, closing such breaks instantly.

In road tests, during which cars were driven at high speeds over spikes, and tires were slashed with chisels, the new tube sealed all penetrations without loss of air, according to the manufacturer.

Three New District Managers Are Appointed by "Oilwell"

Oil Well Supply Co. has appointed Russell G. Stamets, Richard F. Cann, and James R. Boax dis-



STAMETS *CANN* *BOAX*

trict managers of tubular sales in the Midwest division, comprising all oil-producing areas west of the Mississippi River excepting California.

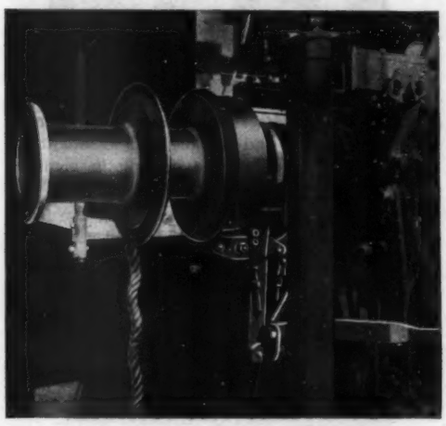
Mr. Stamets goes to Tulsa from Dallas, Tex. He was connected with National Tube Co. from 1903 until he joined the "Oilwell" organization in 1920. Mr. Cann, who moves to Dallas from Fort Worth, Tex., became associated with "Oilwell" in 1923. Mr. Boax remains in Houston, Tex. Before joining "Oilwell" about a year ago, he was service and sales engineer for National Tube for several years.

Stainless-Steel Electrode

The Lincoln Electric Co., Cleveland, Ohio, announces a new arc-welding electrode of the 18-8 type, having 3½ per cent molybdenum. The new electrode, "Stainweld C," was developed by Lincoln engineers to meet a demand for an arc-welding electrode to weld the stainless steels on the market which contain approximately 3½ per cent molybdenum. "Stainweld C" provides weld metal of proper physical and chemical properties for welding such steels.

Safety Spinning Line Cathead Designed to Stop Accidents

Shaffer Specialty Co., Tulsa, is introducing a new safety spinning line cathead which it claims prevents accidents by positive and instantaneous disengagement when the operator lets go of the con-



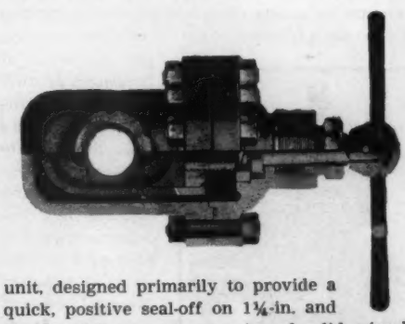
trol lever. The cathead is said to perform all its functions with safety to the operator and increased efficiency for the entire drilling crew.

The safety cathead eliminates a separate line on the tongs; fits any drawworks and reduces insurance costs. The spinning line and tong line are incorporated in a single rope by using a "forked" end. One branch of the fork is used for spinning the pipe. The other fork is permanently attached to the tong handle. Thus with this type of line, the spinning and tonging of pipe are accomplished with a single line.

The cathead is not limited to rotary alone. When used with tubing hoists it not only provides safe operation but increases the efficiency of the crew by speeding up operations and minimizing the use of tongs.

Cameron Control Unit Provides Quick and Positive Seal-Off

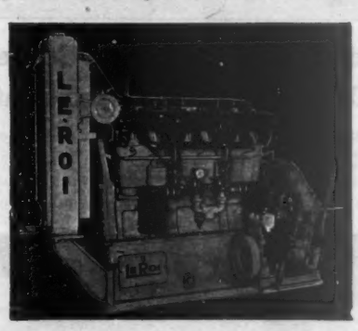
Cameron Iron Works, Inc., Houston, Tex., has announced its new Type 3-SR ram-type control



unit, designed primarily to provide a quick, positive seal-off on 1¼-in. and 1½-in. tubing, or on any size of solid wire line, such as measuring-line, special fishing-line, etc. This new control unit is especially recommended by the manufacturer for fishing jobs inside of drillpipe, tubing, etc. The two flat rams in this unit are fitted with a special type of Cameron self-feeding ram packing element. Rams, which are opened and closed by a single screw, may be furnished solid to permit full closure, if desired.

Six-Cylinder Drilling Engine Is Added to Le Roi Co.'s Line

Le Roi Co., Milwaukee, Wis., has added to its line of heavy-duty drilling engines a new six-cylinder 5½ by 7-in. unit designated as Model RA2S. The



RA2S, because of its six-cylinder construction, is unusually smooth and flexible and is said to be ideally suited to high-speed drilling in medium-depth fields.

Like all other Le Roi drilling engines, the RA2S is built with easily accessible overhead valves and an extra-deep rigid crankcase. It is available with equipment to burn gasoline, natural gas, or butane.

With the addition of this model, Le Roi drilling engines are now available in five sizes, with a range of 65 to 418 hp. Bulletin DE4 describes the line.

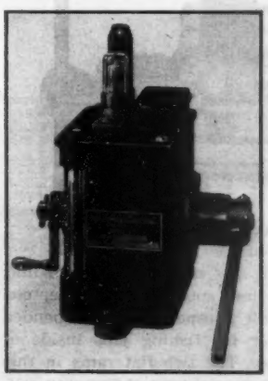
Geist Made Vice President

Walter Geist, recently appointed vice president of Allis-Chalmers Manufacturing Co., Milwaukee, Wis., was born in that city and entered the employ of Allis-Chalmers in February, 1909, as an errand boy. He advanced to draftsman and then to other positions and departments. He originated the idea of the multiple V-belt drive principle of power transmission, known as the Texrope drive. As the market for this product has broadened it has resulted in a large volume of business for the company.

In 1933 Mr. Geist was appointed general representative, in which capacity he supervises the personnel of all district offices of Allis-Chalmers.

Hills-McCanna Co. Introducing New Force-Feed Lubricator

Hills-McCanna Co., 2349 Nelson Street, Chicago, is announcing a new force-feed lubricator capable of delivering a fraction of a drop of oil to 10 drops per stroke at pressures of 2,000 lb. per sq. in. This lubricator has been designed to answer high-pressure bearing and stuffing-box requirements and is ruggedly constructed to offer dependable service, even where high atmospheric temperatures are encountered.



Special provision has been made to keep dirt or foreign particles from entering the feed lines by embodying fine mesh screens in the pump valve, which filter all oil delivered. A feature is the built-in sight feed, made of the new plastic material, "Lucite." It is unbreakable, yet transparent, giving evidence of the amount of oil being fed. Its design does away with the familiar gooseneck spout.

Here and There With Men Who Manufacture Equipment

Republic Oil Refining Co. has taken an extension of its cracking license with Gasoline Products Co., Inc., to cover enlargements in its cracking operations at Texas City, Tex.

Kibele Manufacturing Co., Dallas, Tex., has appointed Walter O'Bannon Co., Tulsa, its sales agent for Illinois oil fields and adjacent districts. J. E. Ragan is O'Bannon representative in that area.

Texasteel Manufacturing Co., Fort Worth, Tex., has appointed Goodson Rieger as sales manager for the Southwest Texas and the Gulf Coast areas.

The Westinghouse Electric & Manufacturing Co. announces that R. B. Mildon, vice president, formerly in charge of the East Chicago division of Westinghouse Electric & Manufacturing Co., has been moved to the Pittsburgh headquarters to assume special sales assignments. A. C. Streamer, formerly manager of the Switchgear division, has been advanced to general manager of the East Pittsburgh division.

A. J. Wadhams, vice president of International Nickel Co., Inc., and manager of the development and research division, has announced the establishment of a new field office at 67 Wall Street, New York. It is under the direction of J. W. Sands.

W. P. Turner, president of Oil Country Specialties Manufacturing Co., has announced establishment of an export sales department at the Pacific Coast plant, 2340 Artesia Street, Long Beach, Calif. The new department will be equipped to serve all export fields, with special facilities for marketing in South America. It will be headed by W. A. Loomis. Lew Cline recently left on a two months' trip to South America for the company.

J-M Lightweight Firecrete Is Adapted for Many Purposes

Following its recent development work on castable refractories, Johns-Manville announces a new lightweight Firecrete for making special refrac-

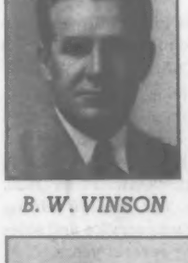
tory shapes, for replacing difficult brick construction, for lining furnace doors, and for making small monolithic linings. The new product is suitable for working temperatures up to 2,200° F.

Accepted laboratory and service tests are said to have shown that this latest addition to J-M's line of Firecrete products, widely used by industry for many years, possesses an exceptionally low heat-storage capacity. This is of special importance in intermittently operated furnaces, since appreciable quantities of heat are wasted in heating heavy firebrick and then allowing the furnace to cool. Lightweight Firecrete is said to be four times as effective as firebrick in retarding heat, while having only half its weight. Also, its resistance to spalling is such that it will withstand direct exposure to flame temperatures.

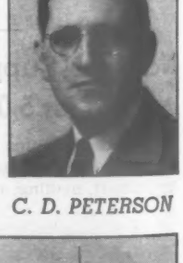
Sixty-five pounds of the material is required per cubic foot of finished construction. It can be used to form any required refractory shape. This is accomplished within a short period of time simply by mixing lightweight Firecrete with water and casting it into a form. Twenty-four hours later the shape is ready to be placed in service.

VINSON SUPPLY CO. NOW AGENT FOR FISHER GOVERNOR

Fisher Governor Co., Marshalltown, Iowa, has appointed Vinson Supply Co., 220 North Boston Avenue, Tulsa, exclusive agent for Fisher control specialties in Oklahoma, eastern New Mexico, western Arkansas, East Texas, Dallas and Fort Worth areas of Texas, West Texas, and the Texas Panhandle, effective June 1. For the Texas territory Vinson Supply Co., of which B. W. Vinson is president, is opening a new district sales office in Dallas. At the Vinson warehouse in Tulsa will be maintained a large stock of Fisher controllers of various types, styles and sizes. Engineering representatives will be available at both Tulsa and Dallas for technical sales and service on Fisher equipment. Charles D. Peterson, district manager for Fisher, will continue as a direct factory representative, with headquarters at the Vinson offices in Tulsa.



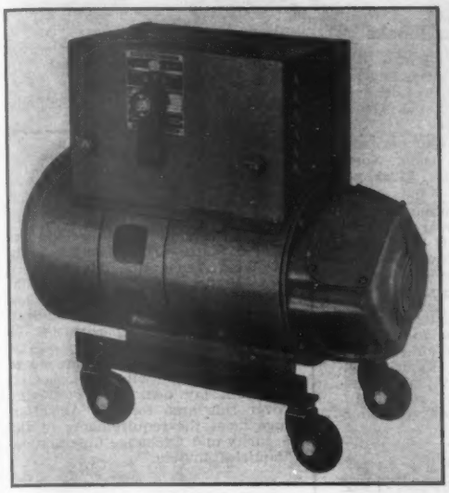
B. W. VINSON



C. D. PETERSON

Fine Adjustment Features New Welding Motor Generator Set

A direct-current arc-welding motor generator set, with a rating of 150 amperes at 25 volts, and a range of adjustments from 20 to 200 amperes at



25 volts, has been announced by Wilson Welder & Metals Co., Inc., New York.

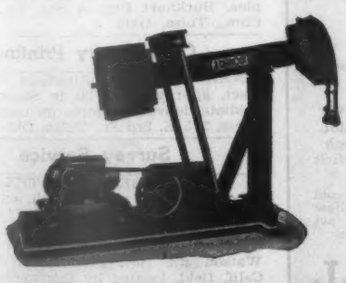
Current control on this new welder consists of a three-point current switch and a dial rheostat control for fine adjustment. It is stated that the smoothness and precision of this adjustment make it possible always to get the right current, and greatly enhance the adaptability of the machine to all types of electrodes, from bare to heavily coated. Open-circuit voltage is from 40 to 75 volts. The set will use electrodes up to three-sixteenths inch diameter. Standard wiring is for three-phase, 220- or 440-volt, 60-cycle power supply.

Welding qualities claimed for this welder are a steady arc and quick voltage recovery, operation without current surges and without losing the arc when welding on thin sections. It is expected these features will greatly reduce losses due to burning through, and those due to the necessity for rewelding defects caused by arc interruptions.

The portable model, equipped with strong rubber-tired casters, is 12 by 26⅝ inches, stands 23⅝ inches high and weighs 338 pounds. The stationary model, without casters, weighs 8 pounds less. The welders, sturdily built for continuous production service, are attractively finished in yellow.

Unit Pumper for Shallow-Well Use Is Announced by Ideco

The International Derrick & Equipment Co., Columbus, Ohio, has added another unit pumper to its Ideco line. It is designed for shallow-well pumping to 2,000 feet depths. Standing only 6 feet in height to the top of the walking-beam, it



is a compact unit and may be transported readily.

This unit, known as DT-61, consists of a D-18 unit reducer and a TO-H6 unit structure. The unit reducer is of the double-reduction type, having an A.P.I. nominal capacity of 3.6 horsepower at 20 s.p.m. or a peak torque capacity of 17,900 inch-pounds. The stroke lengths are 16, 18, 21 and 24-inch. The reducer is equipped with heat-treated single helical gears. Gear ratio is 25 to 1. All shafts rotate in roller bearings. The reducer is enclosed in a new type Ideco solid-hub housing.

The unit structure embodies the use of twin cranks and adjustable beam-weights. The samson-post is of the single-leg type adequately braced and is of all-welded construction. Needle-type roller bearings are used at all beam bearing points. Wristpins rotate in tapered roller bearings. All bearings are perfectly sealed and are equipped for pressure lubrication.

Trade Literature

RUBBER CHEMICALS DIVISION, E. I. DU PONT DE NEMOURS & CO., INC.—Neoprene Notebook, giving facts about neoprene for the engineer.

LANDIS MACHINE CO., Waynesboro, Pa.—Bulletin on Landis heat-treated die-heads.

THE PERMUTIT CO., 330 West Forty-second Street, New York.—Bulletin on portable water-softeners for oil-well drillers.

CATERPILLAR TRACTOR CO., Peoria, Ill.—32-page booklet on Caterpillar Diesel D7 tractor.

CHICAGO PNEUMATIC TOOL CO., 6 East Forty-fourth Street, New York.—Bulletin 762 on portable Diesel-driven compressor.

DAVIS REGULATOR CO., 2543 South Washtenaw Avenue, Chicago.—Bulletin, "Valve Specialties for the Production Division of the Oil and Gas Industry."

WESTINGHOUSE ELECTRIC & MANUFACTURING CO., East Pittsburgh, Pa.—48-page looseleaf booklet on "Economical Power as a By-Product of Process Steam."

PYLE NATIONAL CO., Inc., Chicago.—Two booklets, one on general-purpose plugs and receptacles and one on Triploc and Multiple-Unit plugs and receptacles.

MASON-NEILAN REGULATOR CO., Boston, Mass.—Bulletin No. 201-B, on steam-pump speed-governors and control-valves for use with them.

HEWITT RUBBER CORP., Buffalo, N. Y.—Initial number of Hewitt Magazine, company's new house organ.

INGERSOLL-RAND CO., 11 Broadway, N. Y.—Bulletin on "Pre" compressors in sizes up to 500 horsepower.

CRANE CO., 836 South Michigan Avenue, Chicago.—Bulletin on globe valves and gate valves.

LINCOLN ELECTRIC CO., Cleveland, Ohio.—Bulletin on Lincoln "Super-visibility" and "High-visibility" lens.

WORTHINGTON PUMP & MACHINERY CORP., Harrison, N. J.—Bulletin on vertical four-cycle direct-injection Diesel engines.

Principle of Thin-Disc Orifice Is Employed by Wise Choke

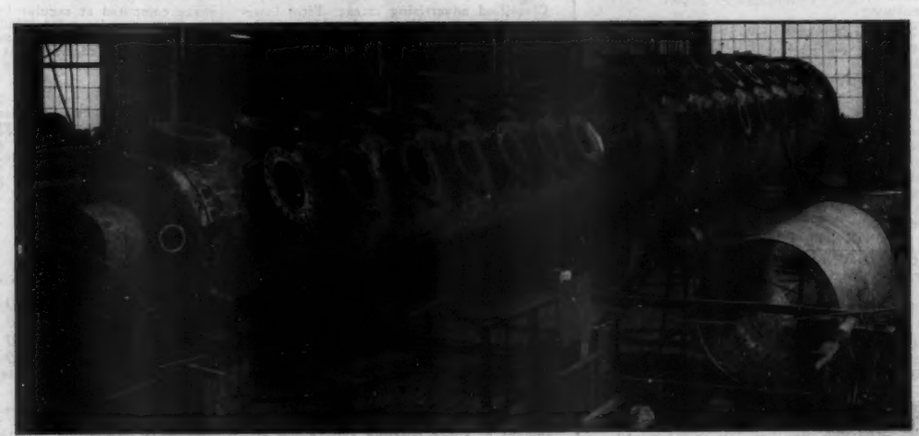
A new type of variable orifice choke, or flow-bean, has been developed and after thorough and satisfactory test is offered to the trade by Wise Machine Co., Butler, Pa. The Wise choke employs the principle of the thin-disc orifice. A series of two thin-plate orifices is used. One, called the down-stream plate, is fixed, and it forms the support for the up-stream plate. The up-stream plate is adjustable; that is, it can be moved over the lower plate as desired, allowing the size of the orifice to be varied from full size to practical shut-off.

The advantage claimed for this new choke is that by use of the thin-plate orifice wear has been greatly reduced. All during the life of these thin plates the choke is said to remain 100 per cent efficient. The chokes are tested for 6,000 pounds pressure, and pressure has no effect on the ease of adjustment. They may be installed in any position and are available in all regular sizes.

Hess District Sales Manager

Gordon F. Hess, formerly assistant manager of sales of the alloy steel division of Republic Steel Corp., in Massillon, Ohio, has been appointed district sales manager of the Houston, Tex., district. Mr. Hess entered the steel business in the metallurgical department of the Central Steel Co., which later went into Central Alloy and is today a part of Republic. He was advanced to assistant superintendent of the heat-treating and cold drawing department of Central Steel and then to superintendent, remaining in that position until 1922 when he was transferred to the sales division. In 1931 he was made assistant manager of sales of the alloy steel division.

VOGT STABILIZER TOWER IS READY TO GO TO WORK



Here is shown a fusion-welded stabilizer tower recently completed in the shops of Henry Vogt Machine Co., Louisville, Ky. The diameter of one section is 4 feet and the other 7 feet 6 inches. The tower is 82 feet 5 inches over all. It is fusion-welded to A.P.I. and A.S.M.E. code specifications for unfired pressure vessels, stress-relieved and with seams X-rayed. The design pressure of the stabilizer tower is 250 pounds, and it is tested at 472½ pounds.

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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

5 ACRE Mineral Deed, Landowners Royalty under entire 80 acres of land leased to Gulf Oil Co. being N½ NW¼ Sec. 30, Twp. 14s, Rge. 31e, full price only $32.50. Perpetual and full participating. Send your check. Guarantee delivery. P. O. Box 968, Hobbs, New Mexico.

320 ACRES, Crane Co., Tex., Magnolia lease, cheap in fee. Address 415 Littlefield Building, Austin, Texas.

SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

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A complete SERVICE EXPERTS in every department of the Oil Business at your SERVICE a REAL SET-UP. The best opportunity ever offered you. Leases in large or small lots at
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200 Don Juan Bldg., Santa Fe, N. M.

FOR SALE Oil and gas leases, drilling propositions and small production. All in shallow territory. Will make price on 500 or more acres, drill and case one or more wells. W. P. HARLEY, Bowling Green, Kentucky.

MISSOURI leases in blocks and scattered acreage. HARRAH & FRITH, Chillicothe, Missouri.

OIL. 1/16th, recorded oil and gas lease assignment in 40 acres adjoining discovery well tract new Kansas high gravity oil and gas field, $125.00. Guarantee to drill and equip well all costs paid when 12 interests sold. 600 to 700 ft. drilling, long lived production. Well adjoining tract has production that will exceed 19% monthly on entire investment. References, maps furnished.
BOX 389, PAOLA, KANSAS

OIL DEVELOPING shallow and deep stratas. Great opportunities for operators in this new field. No proration. Visit our field or write Chamber of Commerce, La Veta, Colo.

PRODUCING LEASES and royalties wanted. Send details to Claude L. Jordan, 409 West 9th, Bristow, Oklahoma.

FOREST CITY BASIN
ACREAGE FOR SALE
21,000 acres 10 year leases at 40c per ac. Annual rental 25c. Certificates of title. Checkerboarded among large major company blocks. Near old Kansas production and new drilling. Wells with good showings. Geo. L. Struble, Box 957, Tulsa, Okla.

2,300 ACRES free lease. Production on three sides. Want drilling contract. Box 362, Merkel, Texas.

Leases and Drilling Blocks

HAVE block located SW corner Guadalupe County, Texas, 3 small wells producing from 600-foot level, excellent show at 750 feet. Believe will make commercial well. One well producing in chalk from 1,765 to 1,800 feet. Good geology and prospects for Edwards Lime pay at about 2,000 feet and Glen Rose at about 2,900 feet. Will give leases, production, and equipment to responsible parties for small cash and an oil payment for immediate development.
BRUIN OIL CO. — PHONE 2-7875
207 Ricou-Brewster Bldg., Shreveport, La.

FOR SALE, section land Terry Co. Texas. Located Brownfield pasture. Abst. 2, Block Y, Survey 5. Address, James H. Hannan, Bladen, Ohio.

40 ACRES, 32-22-15, Caddo Parish.
I. T. RHEA
P. O. Box 690, New Orleans, La.

ALBERTA—CANADA
Leases and Drilling Blocks
Tell us your requirements and receive promptly full and accurate information.
OILFIELDS INFORMATION AGENCY
L. A. Duncan and C. T. Fillan
810 Lancaster Bldg., Calgary, Alberta.

OIL Leases—Royalties, North Missouri, Linn; Sullivan; Adair; Mercer; Grundy; Daviess; Putnam; Harrison Counties. Write O. L. Keesee, Milan, Mo.

HAVE 83 acres in proven Vigo County, Indiana field. Standard Oil pipeline runs through this property. Drilling deal wanted. M. E. DRAKE, 7024 Amherst, St. Louis, Mo.

NEW MEXICO
State Oil and Gas Leases
Forty acres and multiples thereof at $6.00 to $60.00 per forty in the Hot Spots. No junk! Buy where the major companies own leases. Write for lists. Twenty years in the business and not a complaint.
HARRY S. WRIGHT, STATE LESSEE
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Box 347, Santa Fe, New Mexico

WILL undertake to deliver about 200,000 acres south Georgia leases in blocks 1,000 to 50,000 acres on drilling contracts. Deep test now drilling. C. W. Deming, registered dealer, Waycross, Ga.

KENTUCKY AND INDIANA is the field to operate in for quick profits. Shallow drilling, big wells, high gravity oil. We offer you a bed rock deal on your investment. At present wire or write, Box 2152, Wichita, Kansas.

Leasing and Drilling Blocks

GET THE FACTS about Forest City basin. Don't buy leases because they are cheap, buy because they are on Geophysical highs and known structures. Geologist, Box 423, St. Joseph, Mo.

DEALERS, SALESMEN, sell hot spot leases in the Forest City basin, North Missouri near drilling wells. $1.25 per acre up. Box 2231, Wichita, Kans.

ACREAGE for lease also mineral rights. Direct from land owners. Near deep test now drilling. T. A. GREER LBR. CO., De Berry, Panola County, Texas.

Money Raising

WANT CAPITAL to invest in perpetual mineral rights in North Permian Basin in Texas and New Mexico in major company blocks on geophysical highs. Rapid development under way now. Will take interest after all monies have been repaid. Address Box J-990, The Oil and Gas Journal, Tulsa, Okla.

Mailing Lists

ROYALTY Lists. Unit Owners Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Building, Tulsa, Oklahoma.

For Sale—Maps

1939 EDITION MAP OF TEXAS
and Eastern New Mexico shows all OIL and GAS FIELDS up to date
$1.00 per copy
WILDCAT MAP published monthly on same area $3.00 per copy $30.00 one year
ZINGERY OIL MAP COMPANY
Fair Bldg. Fort Worth, Tex.

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Satisfied with C. R. Cole's "News Letters" in lieu of 20 years' dividends?—Enthusiastic over prospects of Trust Estate Agreement terminating in July, 1940, according to Cole's present plan? If not, communicate with:
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5463 Dahlia Dr., Eagle Rock, (L.A.) Calif.

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Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

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PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

WILL BUY non-producing landowners royalty—under drilling wells only. P. H. HAWLEY, 727 W. 7th St., Los Angeles, Calif.

WANTED producing oil royalties and oil payments in North and West Texas and New Mexico. P. O. Box 1535, Fort Worth, Texas.

OWNERS of fractional landowners royalty interests still paying send full details to City Investing Co., 434 Roosevelt Bldg., Los Angeles, Calif.

Business Opportunities

ATTENTION
NEW SOFT FORMATION ROTARY BIT Patented. Sound Engineering. Attractive exclusive manufacturing proposition open.
Address Box K-101
The Oil and Gas Journal,
Tulsa, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Mining Opportunity

SACRIFICE—6 mining claims big hole foot of Squaw Mt. 4 veins. Run carries gold, silver, and lead. Good fishing and hunting—bear, deer, and mountain sheep. Reason for selling, no capital. Mining, 336 E. Granite St., Butte, Mont.

Legal Blanks

SINCE 1908 Burkhart's legal forms—serving Mid-Cont. oil fields, including Ill., La., Mo., Ind. & Ky. Free catalog & samples. Burkhart Ptg. & Sta. Co., 115 So. Cinn., Tulsa, Okla.

Oil Industry Printing

NEW—N.G.A.A. Casinghead Gas Contract, approved 4/4/39 in Stock for immediate delivery, sample on request. Olds Press, 215 E. 3rd St., Tulsa, Okla.

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REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this method finds it. Faults, broken, treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1548 Post, Torrance, Calif.

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Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

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5 Lines	1.75	3.00	4.25	5.50	9 Lines	3.15	5.40	7.65	9.90
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